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# Outcomes of Aggression Replacement Training for U.S. Adolescents in Residential Facilities

Coral Ann Ondrus  
*Walden University*

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# Walden University

College of Counselor Education & Supervision

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Coral Ondrus

has been found to be complete and satisfactory in all respects,  
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Walden University  
2016

Abstract

Outcomes of Aggression Replacement Training for U.S. Adolescents in Residential  
Facilities

by  
Coral Ann Ondrus

MA, Edinboro University, 2010

BS, Edinboro University, 2006

Dissertation Submitted in Partial Fulfillment  
of the Requirements for the Degree of  
Doctor of Philosophy  
Counseling Education and Supervision

Walden University

May 2016

## Abstract

A National Survey indicated that 1.6 million adolescents in the U.S. were arrested in 2010 and 1.5 million in 2011 for erratic aggressive behaviors, thus showing a decline from the 2.18 million adolescent arrests in 2007. Residential facilities in the state of Pennsylvania offer a group intervention called Aggression Replacement Training (ART) to help adjudicated adolescents regain control of erratic behaviors. The purpose of this study was to examine the extent to which level of group participation in ART and certain demographic factors (age, gender, ethnicity, family socioeconomic status, parental involvement, and education) predict decreased aggression and increased anger control among these youth. Cognitive theory and change theory were used to guide this causal-comparative investigation. The overarching research question was, does a youth's level of ART group participation (i.e., attentive, inattentive, and resistant) result in a subsequent reduction in risk assessment as measured by post Aggression Questionnaire score differences. Data were collected for the period of 2011-2014 from archival records from 5 residential facilities ( $n = 160$ ) in Pennsylvania and were statistically analyzed. Findings from an analysis of variance indicate that ART group participation predict decreased erratic aggressive behaviors and increased anger control among adolescents. Findings from multiple regression analyses indicate that parental involvement predicts attentive participation level, whereas ART group participation, gender, and parental involvement predicted a reduction in risk assessment. Study findings may assist other treatment facilities and affiliated agencies in the U.S. with developing and implementing effective interventions for youth who exhibit erratic aggressive behaviors.

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## Dedication

I would like to dedicate this dissertation to my late husband, F. Thomas Ondrus, who believed in me and supported me in completing my educational goals beyond his lifetime. I would also like to thank my mentor Mark Diplacido for remaining a positive support system throughout my internship and dissertation. His support along with others within the Perseus House Corporation went above and beyond helping me stay on task and supporting me through some trying times during this process.

Finally, I also want to thank my four children, Michael Sowers Jr., Krystal Sowers, Joshua Kennedy, and Jacob Kennedy, for standing behind their mother and assisting me throughout my educational adventure over the years. This process has taught me never to be afraid to reach out and ask for guidance to help walk my path in life. I feel that my path is to continue to reach out and help those as much as all of my supporters have helped me, thus enhancing social change as my path in life continues.

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## Chapter 1: Introduction to the Study

### **Introduction**

Many adolescents struggle to function in U.S. society without displaying erratic aggressive behaviors. The Office of Juvenile Justice and Delinquency Prevention (2014) indicated that one in four U.S. residents in 2010 were under the age of 18-years-old and have been estimated to increase 10% by the year 2035. Adolescents who have been exposed to violence, neglect, abuse, and live in poverty have a higher rate of performing delinquent acts (OJJDP, 2014). In 2007, nearly 2.18 million U.S. adolescents were arrested for engaging in substance abuse, theft, physical aggression, and property destruction, thus increasing their likelihood of being placed into a residential treatment facility (Kennedy et al., 2011; Rhule, 2005). However, a recent National Survey indicated that 1.6 million adolescents' in the U.S. were arrested in 2010 and 1.5 million in 2011, thus showing a decline in erratic aggressive behaviors (OJJDP, 2014). More importantly, the survey showed that adolescents continue to have difficulty functioning society and engage in aggressive behaviors such as larceny theft, simple assault, drug abuse, and simple assault (OJJDP, 2014). OJJDP (2014) indicated that in 2010, there were 71,000 adjudicated delinquents placed into residential treatment facilities and this does not account for those adolescents' that were admitted through affiliated agencies such as Children and Youth Services and post hospitalization recommendations. Residential treatment facilities are characterized as an out-of-home twenty-four hour care facilities that vary in therapeutic modalities, environmental settings, program components, and treatment population (Nofle et al., 2011). Nofle et al. (2011) indicated that residential

treatment has been found to reduce the adolescent's initial symptoms at discharge, thus indicating that the adolescent's treatment modality was effective when compared to admission levels.

Diverse behaviors among adolescents vary and take many forms that can either enhance positive experiences or cause negative experiences. Adolescents with antisocial behaviors have been shaped by a combination of life experiences such as parental involvement, education, socioeconomic status, age, gender, and ethnicity, which consequently can lead to poor anger control and aggression (McKinnie Burnie, 2006; Vecchi, 2009). Aggressive behaviors may take many forms such as social, physical, emotional, and verbal abuse, which could lead to other serious crimes (Karriker-Jaffe, Foshee, Ennett, & Suchindran, 2008). According to Kennedy, Burnett, and Edmonds (2011), juvenile delinquency is associated with increased violence and fears about safety, thus remains complex, expensive, and a disturbing problem that emerges from wide range of variables across all levels of development. Variables from multiple distinct domains of stimulus attribute to delinquent behaviors and have proven to be useful in predicting specific types of offenses (Kennedy et al., 2011).

Treating an array of diverse behavioral problems in residential facilities can be challenging, thus leading to an ongoing need to find an intervention that is effective across domains. Based on assessment results, Amendola and Oliver (2013) found that cognitive interventions may be effective for aggressive children and adolescents, by teaching adolescents to become aware of thinking errors and learn to correct those irrational thoughts. Cognitive processes such as acknowledgements, expectations,

interpersonal beliefs, and problem solving seem to be most influential in determining one's response to aggravation, according to Feindler and Engel, 2011, because aggravation activates anger arousal, which is a mediator of aggression. Feindler and Engel (2011) explained that when an adolescent is exposed to an adverse stimulus he or she become aroused and reacts aggressively. Moreover, aggressive reactions are often seen in adolescent who demonstrate an underdevelopment of social skills, which lead to social isolation, withdrawal, and anxiety (Feindler & Engel, 2011). A treatment modality that focuses on the complexity of aggression and anger management is known as Aggression Replacement Training (ART).

In my study, I sought to identify what factors predict participation level in Aggression Replacement Training (ART) among adolescents housed in residential treatment facilities. I also examined whether attentive participation in ART can lead to increased anger control and reduced aggressive behaviors. This is important step to understanding the different group interaction styles of adolescents who participate during group sessions. Moreover, identifying predictor variables will help the group leaders to understand that each adolescent has his or her own perceptions of group and learning styles.

Social change from my study may occur by helping to identify factors leading to treatment success and empirically validating effective treatment modalities such as ART group therapy. This can help reduce aggressive and antisocial behaviors, thereby helping these adolescents become more productive members of society, and in turn reducing the juvenile detention rate. In Chapter 1, I provide background about aggressive behavior

among adolescents, state the problem and purpose of my study, and present my research questions and hypothesis. I also provide an overview of my theoretical foundation and method, offer key definitions, and discuss the assumptions, scope, limitations, delimitations, and significance of the study.

### **Background**

Understanding the dynamics of adolescent behavioral problems can be challenging and misconstrued by society or caregivers. According to researchers, delinquent behaviors among adolescents may be influenced by various variables from different domains such as family history, past experiences, personality or behavioral predisposition, and intellectual capacity (Kennedy et al., 2011). For example, Wang, Hsu, Lin, Cheng, and Lee (2009) found that family communication, peer role models, nonparent role models, responsible choices, and future aspirations all played a vital role in youth risk taking behaviors. Moreover, Wang et al. (2009) indicated that youth risk taking behaviors seem to escalate during the juncture of childhood and adolescence because of rapid physical, social, and psychosomatic changes and resulting stressors. The importance of gaining a history of an adolescent will help others begin to understand the problem behaviors, such as aggression, being executed.

Adolescents displaying aggressive behaviors have become more noticeable and challenging within their social environment. Experts have found evidence of an association aggressive behaviors among adolescents' sociocultural backgrounds and environmental and peer interactions (Wang et al, 2009). Adolescents who are experiencing increased amount of stress seem to become more vulnerable or susceptible



to negative cognitive deficiencies and distortions that have been formed over time (Feindler & Engel, 2011; Wang et al., 2009). For example an adolescent exposed to countless stimuli may become enticed to pay more attention to the competing stimuli, thus in return may suffer cognitive confusion (DeWall, Maner, & Rouby, 2009), resulting in distress and perceptions of hostility in social situations (Fives, Kong, Fuller, & Disgiuseppe, 2011). Moreover, adolescents experiencing cognitive deficiencies and distortions lack problem solving skills and generate few solutions, which can increase their susceptibility to anger and aggression to elicit stimulus (Feindler & Engel, 2011; Fives et al., 2010). Fives et al. (2010) indicated that adolescents who demonstrate aggressive or destructive behaviors tend to have poor therapeutic prognosis, peer difficulties, early school dropout, and future antisocial behaviors. Developing an awareness of how exposure to different stimuli has diverse effects on adolescents may help caregivers begin to understand the adverse reactions as they occur.

Adolescents who have unpredictable reactions may have misconceived factors attributing to those unsolicited responses. Understanding aggressive reactions by adolescents to situations is important because of possible impacts on these emerging adults' future family, educational, social, and peer interactions (Chen, Symons, & Reynolds, 2011). Chen et al., (2011) explained that an inconsistent representation of youths with learning disabilities and emotional disturbance in the juvenile justice has become a national concern. Adolescents with a learning disability or emotional disturbance have increased vulnerability and are more unlikely to transition to society (Chen et al., 2011). Chen et al., (2011) indicated that differences in individual

development are related to diverse influences within and between individual and nested environmental structures. Exposure to different situations throughout development shape and encourage adolescents to follow their own beliefs and ethnic values as they mature.

Adolescents today are exposed to an array of ethnic belief systems within society, school, and integrated families. For Yasui and Dishion (2007), examining a multitude of sociocultural influences that may attribute to risky behavioral choices is essential for understanding today's youth. Moreover, research indicated that developmental and intervention models adolescents with behavioral problems such as aggression are underdeveloped and do not incorporate diverse differences culturally specific values and traditions (Yasui & Dishion, 2007). Yasui and Dishion (2007) explained that adolescents that are in the diversified minority group often experience dual parental socialization practices that bridge two more worlds and are confronted with implicit and explicit challenges from both cultures. Characteristics of understanding the behavioral challenges the adolescent may be experiencing may start the basic family dynamics (Prilleltensky & Nelson, 2000). Prilleltensky and Nelson (2000) indicated that forming interventions through a families structured values and concepts that represent a good moral foundation will help close the gap in their adolescent's behavioral problems.

Adolescents and parents who struggle with miscommunication and behavioral outbursts may need to reach out for extra guidance to aide in anger management. By using ART, counselors are able to introduce adolescents and their family members to anger management components that empower them to modify their anger through prosocial skill development (Goldstein, Glick, & Gibbs 1998). Goldstein et al., (1998)

indicated that anger control sessions allows for the family members to be supportive, thus in turn the adolescents receive encouragement for positive thinking and behavioral choices. Moreover, the new skills learned well and successfully will persist if the family members continue to provide maintenance and support the adolescent's positive interactions within the home environment (Goldstein, et al., 1998). ART consists of anger control, skill streaming, and moral reasoning group therapy (Goldstein et al., 1998). Goldstein et al., (1998) described each component of ART differently; anger control is referred to as the emotional portion, moral reasoning as the values portion, and skillstreaming as the behavioral part that work together in sequence to motivate new skill development. Adolescents who attend group sessions are introduced to group rules and routines that must be met as part of treatment expectations. Researchers have found that there is a gap in the empirical research in regard to linking factors such as parent involvement, education, socioeconomic status, age, gender, and culture as attributes to aggression and lack of anger control during adolescence (McKinnie Burnie, 2006; Racz, McMahon, & Luther, 2011). Therefore, it is important that these factors are explored in relationship to anger control and aggression in youth within residential treatment facilities to facilitate treatment success.

### **Problem Statement**

Residential treatment facilities are designated as a last resort intervention for high-risk adolescents for addressing their inability to function adequately within society (Kurtz, 2002; Racz, McMahon, & Luther, 2011). Adolescents are usually placed in residential facilities for 3-9 months, depending on their progress in treatment and

underlying circumstances. However, research has indicated that long term exposure to erratic delinquent behaviors among other residents may increase adolescents' propensity for high-risk behaviors (Shapiro, Smith, Malone, & Callaro, 2010). Knorth, Klomp, Van den Bergh, and Noom (2007) explained that aggressive behaviors often represent a complexity of diverse problems in residential youth care, given that the aggressive behaviors in the home environment are often carried over into a stricter environment. My study addressed an under-researched area related to factors hypothesized to be associated with increased participation in adolescent anger control and reduce aggressive behaviors within residential facilities.

### **Purpose of Study**

The purpose of this quantitative study was to examine whether the adolescents' demographic variables (e.g., age, gender, family socioeconomic status, parental involvement, ethnicity, and education), and level of group participation in ART predict increased anger control and reduction of aggression among adolescents living within residential treatment facilities as indicated by archival Aggression Questionnaire (AQ) overall outcome data. The AQ is a self-rated assessment questionnaire that is administered to adolescent at the intake and exit interviews with their mental health Therapist.

### **Research Questions and Hypotheses**

The research questions and hypotheses undergirding my study follow:

RQ1: Among adolescents in residential treatment, is there a significant different between level of group participation (attentive, inattentive, and resistant) in ART and

successful outcomes (i.e., decreased erratic aggressive behaviors and increased anger control), as measured by the overall posttest AQ score difference?

$H_01$ : There is no significant difference between level of group participation (attentive, inattentive, and resistant) in ART that can affect successful outcomes of decreased erratic aggressive behaviors and increased anger control as measured by the overall posttest AQ score difference among adolescents in residential treatment.

$H_a1$ : Among adolescents in residential treatment, there is a significant difference between levels of group participation (attentive, inattentive, and resistant) in ART and successful outcomes (i.e., decreased erratic aggressive behaviors and increased anger control), as measured by the overall posttest AQ score difference.

RQ2: Do the variables age, parental involvement, gender, family socioeconomic status, ethnicity, education, and level of group participation (attentive, inattentive, and resistant) predict a reduction in risk assessment, as measured by the AQ (Buss & Warren, 2000)?

$H_02$ : Age, parental involvement gender, family socioeconomic status, ethnicity, education, and level of group participation (attentive, inattentive, and resistant) do not predict a reduction in risk assessment for participants.

$H_a2$ : Age, parental involvement gender, family socioeconomic status, ethnicity, education, and level of group participation (attentive, inattentive, and resistant) predict a reduction in risk assessment for participants.

RQ3: Do age and parental involvement predict reduction in risk assessment over and above the variables of gender, family socioeconomic status, ethnicity, education, and level of group participation (attentive, inattentive, and resistant)?

$H_{03}$ : Age and parental involvement do not predict reduction in risk assessment over and above the variables of gender, family socioeconomic status, ethnicity, education, and level of group participation (attentive, inattentive, and resistant).

$H_{a3}$ : Age and parental involvement do predict reduction in risk assessment over and above the variables of gender, family socioeconomic status, ethnicity, education, and level of group participation (attentive, inattentive, and resistant).

RQ4: Do the variables of age, parental involvement, gender, family socioeconomic status, ethnicity, and education predict attentive participation level in ART?

$H_{04}$ : Age, parental involvement, gender, family socioeconomic status, ethnicity, and education do not predict attentive participation level in ART.

$H_{a4}$ : Age, parental involvement, gender, family socioeconomic status, ethnicity, and education predict attentive participation level in ART.

RQ5: Do age, gender, and education predict attentive participation level over and above the variables of family socioeconomic status, parental involvement, and ethnicity?

$H_{05}$ : Age, gender, and education do not predict attentive participation level over and above the variables of family socioeconomic status, parental involvement, and ethnicity.

*H<sub>a5</sub>*: Age, gender, and education do predict attentive participation level over and above the variables of family socioeconomic status, parental involvement, and ethnicity.

### **Theoretical Framework**

Because of its focus on how an individual's thought processes, behaviors, and emotional responses to a problem evolve (Beck, 2006; Beck & Beck, 1995), I chose to use cognitive therapy as the theoretical framework for my study. Beck (2006) indicated that cognitive therapy consists of testing a client's flawed beliefs and reframing them in a logical, more realistic manner. For example a client in residential treatment may misconstrue a simple gesture; therefore, cognitive therapy is creates an approach for the identification of cognitive distortions within the day-to-day thinking of clients (Gavita, Joyce, & David, 2011). Adolescents who struggle with diverse behavioral problems have different perceptions on how events occur and react differently.

Frick (2001) described cognitive-behavioral deficits as the inability to process social information, encode, make decisions, enact appropriate responses, interpret cues, and develop social goals and responses. Research has indicated that aspects of residential treatment facilities were found to be positive and negative, thus indicating that treatment format and collaboration are both part of a systemic process (Dattilio & Hanna, 2012). A therapist and patient working together while in cognitive therapy was considered one of the primary change agents in treatment (Dattilio & Hanna, 2012). Beck (2006) indicated that forming a strong working relationship during the therapeutic process is crucial. For example the treatment team and clients' working together to create an atmosphere of trust within a residential treatment facility can aid in behavior modification among group

members (Vollmer, 2005). Vollmer (2005) explained that encouragement, good role modeling, and working together promote learning opportunities for positive interactions among the residential group. Building and encouraging adolescents to work together increases new skill development such as anger management and decreased aggression outbursts.

Furthermore, researchers indicated that using a cognitive therapeutic approach is effective for reducing feelings of anger, anger-out, and aggression when an adolescent is in a confrontational situation, thus increasing anger control (Sutcu, Aydin, & Sorias, 2010). Adolescents in residential treatment are encouraged and empowered to begin to implement new skills throughout their treatment. Sharf (2012) indicated that individuals use cognitive structures to process information and create meaning by making connections, finding patterns, identifying rules, and conceptualizing values. Adolescents in residential facilities are introduced to new rules, routines, therapeutic modalities such as ART, which begins to modify their previous ways of processing, making connections, identifying patterns through new skill development. Beck (1976) indicated that this new rule structure may serve as standards adolescents to evaluate, guide, or deter unwanted behaviors. Subsequently, new rules could provide the opportunity for a troubled adolescent to evaluate the significance of a peer's actions and interpret how he or she regards those actions based on his or her own values and beliefs (Beck, 1976). My study added to the empirical research on cognitive therapy (Beck, 1976; Sharf, 2012; Vollmer, 2005) through the execution of new rule structure. For example the treatment team assesses how the adolescent changes in interactions with other peers, utilizes new skill



connections, and adheres to new rules over time can be compared to the adolescent's change in aggressive behaviors through posttest outcome scores.

Exposure to new experiences such as relocating encourages change, which in turn allows the adolescent to fit into his or her new environment. Lewin and Gold (1999) described a model of change theory, which consists of three phases: unfreezing, movement, and refreezing. Subsequently, this model fits with a residential treatment facility atmosphere, which implements change through providing a safe and trusting place for adolescents to work on their treatment goals. Lewin and Gold (1999) described a lasting change with an objective plan that helps an individual move through each phase as a force field. An example of this occurs in residential treatment during a monthly treatment team meeting, where the team reviews each level of a force field to examine whether or not the treatment modality is effective or ineffective.

Team monitoring the adolescent's active treatment plan allows for his or her treatment team to monitor goals being met. Ensminger and Surry (2008) described unfreezing as examining one's readiness for change, through awareness of their assumptions, principles, ethics, and outlook. Once the adolescent adjustment to the new rules becomes apparent, refreezing occurs (Lewin & Gold, 2009). Ensminger and Surry (2008) described the second phase movement as introducing the change that the residential treatment facility would like to implement, and then take the initiative to challenge and uncover the adolescent's barriers. Once the change is implemented, refreezing occurs as a new level of permanency or force field to help the adolescent adjust to the change (Ensminger & Surry, 2008; Lewin & Gold, 2009). Empowering

change through psychoeducation group therapy increases the adolescent's ability to function within society and within his or her home environment without aggression or violent behaviors (Amendola & Oliver, 2008; Sharf 2012). A more detailed description of the theoretical framework will be provided in chapter two.

### **Nature of Study**

An existing dataset was used for my study, since the data has already been collected and there cannot be a random assignment of the participants. Therefore, the casual-comparative pre-posttest design was the most appropriate to use in the retrieval of archival data from residential facilities in Pennsylvania. This was a systematic empirical approach that did not entail experimental manipulation or random assignment of the participants, as the events have already transpired (Rudestam & Newton, 2008). Data for my study was retrieved from the archival intake information such as age, gender, family socioeconomic status, ethnicity, and education has been collected by facility case manager and master level mental health therapists. Subsequently, the level of participation was collected from the ART group facilitator's rating scale which utilized a three-point rating scale to rate the group participants with scores of: (1) poor/resistant (2), moderate/inattentive (3), and excellent/attentive. Ratings were scored at the end of group sessions to assure that the trained ART facilitators have observed the adolescents' levels of participation. These rated levels of participation were documented on an individual's point cards, group case notes, and in daily activity progress logs. Finally, the archival data such as pretest, overall posttest AQ outcome results that were numerically recorded, ART group therapy participation level, and family therapy participation or no

participation that have been documented by master level mental health therapist and treatment team were collected from final archival discharge report that were stored in a secure room at the Perseus House central office. The central office is the home base of the non-profit organization located in Erie, PA. Moreover, manages several residential facilities located within the surrounding area of Pennsylvania.

### **Definitions**

Several terms were extracted from the information collected and were added as my study evolved. These terms include but are not limited to the following:

*Age:* biological and psychological changes that a person must adapt too, from the time of birth over his or her life span (Broderick & Blewitt, 2010). For the purpose of my study, age was operationally defined as the age listed in the demographic intake sheet that provided a space for the adolescent to self-report age and date-of-birth during the residential program intake interview.

*Aggressive behavior:* A form of violent, unpredictable, impulsive, or reactive behavior designed to harm or injure another individual, property, or self (Schaffer & Kipp, 2007). For the purpose of my study, aggressive behavior was measured by the pretest and posttest self-report on the aggression questionnaire during the intake and discharge processing.

*Education:* is the transmission of knowledge by either formal or informal means that play an important role in successful development of prosocial skills, academic achievement, and higher levels of self-esteem through positive interactions (Gaskins & Mastropieri, 2010). For the purpose of my study, education was operationally defined as

the educational level listed in the demographic intake sheet that provided a space for the adolescent to self-report education level during the residential program intake interview.

*Ethnicity:* cultural traditions, beliefs, attitudes, and values handed down through generations to individuals (Broderick & Blewitt, 2010). For the purpose of my study, ethnicity was operationally defined as the ethnicity self-reported on the demographic intake sheet that provided a space for the adolescent to self-report ethnicity by check a box labeled Caucasian, Latino, and so on... during the residential program intake interview.

*Facilitators' Aggression Replacement Training rated participation level:* The ART group facilitators are trained by certified ART instructors during their two weeks of employee orientation training and are required to take refresher courses once a year by the residential employment guidelines. The group facilitators utilize a three-point rating scale to rate the group participants with scores ranging from poor/resistant, which is indicated as a score of one, to moderate/inattentive, which is indicated as a score of two, and excellent/attentive, which is indicated as a score of three. Ratings are scored at the end of group sessions to assure that the trained ART facilitators have observed the adolescents' levels of participation. These rated levels of participation were documented on an individual's point cards, group case notes, and in daily activity progress logs.

*Family socioeconomic status:* socioeconomic status has been defined as a group of individuals that have the same social standing or power that are defined by the characteristics such as educational background, income, and occupational type of the parent/parents' in the same household (Broderick & Blewitt, 2010). For the purpose of

my study, family socioeconomic status was operationally defined as the family socioeconomic status self-reported on the demographic intake sheet that provides a space for the parent/caregiver to self-report income, work-related status, and educational background residential program intake interview.

*Gender:* male or female sexual identity and one's ability to understand its meaning (Broderick & Blewitt, 2010). For the purpose of my study, gender was operationally defined as gender identity listed in the demographic intake sheet that provides a space for the adolescent to self-report male or female during the residential program intake interview.

*Levels of participation:* three levels of participation during ART group therapy have been identified and defined as attentive, inattentive, and resistant. For the purposes of my study, treatment expectations that were identified for the attentive group included: the adolescent attends all groups, completes assigned homework, participates in discussions, volunteers to help other peers, and participates in role-play activities. Treatment expectations that were identified for the inattentive group included: adolescent attends groups, but only participates when prompted, and refuses to engage in role-play activities. Treatment expectations that were identified for the resistant group included: adolescent attends group, but disrupts peers, and refuses to follow group rules (Sharf, 2012).

*Parental involvement:* Aspects of family-driven behavior consist of the parents as the primary decision makers in the adolescent treatment, as well engaged in family therapy; thus creating a sense of empowerment among the parent-adolescent relationship

(Brown, Barrett, & Ireys, 2010). For the purpose of my study, parent involvement was operationally defined as parental involvement, as listed in the discharge summary report when the adolescent completed his or her treatment goals. Subsequently, parental involvement was coded as 1 = yes and 2 = no in the SPSS analysis process.

### **Assumptions**

Several assumptions could be made, given that my study is a quantitative causal-comparative pre-posttest examination of records of previous clientele that received residential treatment. It was assumed that all information retrieved from these stored records were accurate. Another assumption was that all information reported during the adolescent's treatment was an unreserved and true accounting of his or her group treatment experiences.

### **Scope and Delimitations**

A quantitative casual-comparative after the fact pretest and pretest study was conducted because of the protected population in adolescent residential facilities and the subsequent challenge to get Institutional review board (IRB) approval. The data was previously collected and was current, which helped to delineate the differences or similarities among the factors associated with decreased aggression and an increase in anger control in the study. A better understanding of treatment outcome is needed to build individual post-treatment foundation to help further the adolescents' re-integration successes in education, family, social, and peer acceptance without aggressive behaviors. However, an after the fact casual comparative study is also beneficial, because it allowed the aftercare treatment team to view what helped the adolescent reach residential

treatment successes rather than make an assumption that the outpatient treatment will work for every adolescent the same. Amendola and Oliver (2010) indicated that intervention models are designed with the best intentions; however, interventions often have difficulty maintaining fidelity and effectiveness. My study helped provide more evidence that aggression replacement training teaches struggling adolescents skills to deal with his or her fears, anger, and aggression through a series of structured learning groups (Amendola & Oliver, 2010).

Since there were limited studies related to this topic, it is unknown whether the factors chosen in my study will help eliminate the gap in understanding why some adolescents respond to treatment, while others may resist treatment. One delimitation in my study was limiting participation to five residential facilities' associated with Perseus House Inc. located in Pennsylvania. Another delimitation was the after the fact information that was retrieved from adolescent records with an age range from 11 to 19 years-old. A third delimitation was the adolescent groups were interrupted at times due to clientele discharges and new clients arriving. For example adolescents are sometimes accepted in residential treatment due to the program intake availability and may arrive mid-group or at the end of a group, which may cause initial confusion to group format, increased fear of acceptance, and the adolescents understanding group topic. This coincides with Feindler and Engel (2011) found that an adverse stimulus triggers physiological arousal and distorted cognitive responses, which in turn result unwanted feelings of resentment and precipitate aggressive responses.

### **Limitations**

The first potential limitation was that the casual-comparative after the fact study did not utilize participants in person, but rather only their records in order to retrieve the data. This was an implication due to the researcher's inability to view the participation level during group treatment. As a result, I could only infer from the sequence of events documented in the subjects' records. Another limitation may be accurate documentation of treatment during the adolescents' residential stay and treatment outcome. This was an implication given that staff perceptions of treatment participation may vary, thus causing biased treatment outcome documentation. One other potential limitation was the fidelity in how each of the five residential facility group leaders facilitates the ART group to the participants. This was an implication given that each group leader has different levels of experience; for example a newly trained leader at one of the sites versus a group leader employed for 5 years. A final limitation was the participants' gender; two of the five facilities utilized in the study are male. This was implication that can offset the gender variable outcome score in relation to group participation level and reduction in risk assessment.

### **Significance**

The results of my study is intended to expand the research and understanding regarding factors that predict attentive, inattentive, or resistant levels of adolescent participation in ART and whether ART can affect successful outcomes for a decrease in aggression and an increase in anger control as measured by the posttest overall Aggression Questionnaire (AQ) score differences among adolescents in residential



treatment. Previous literature suggested that predicting factors such as parental involvement, adolescent level of education, family economic status, age, gender, and ethnicity as possible intercorrelations of problem behaviors, but could not be limited to one factor (McKinnie Burnie, 2006; Racz, McMahon, & Luther, 2011). Subsequently, indicating that a combination of various influencing factors that could lead to increased aggressive behaviors. Insight from my study helped to identify which demographic variables predict participation level in ART and whether participation level determined successful outcome for anger management and aggression control. The results of my study may be able to help residential treatment providers identify adolescents who are at a higher risk for treatment failure due to noncompliance, and allow treatment providers to intervene sooner to improve treatment success rates.

### **Summary**

This casual-comparative study was undertaken to address the research gap in the literature regarding linking factors such as parent involvement, education, socioeconomic status, age, gender, and ethnicity as attributes to aggression and lack of anger management. The aim of my study was to learn more about the predicting factors associated with an adolescent's response to his or her level of group participation, thus decreasing post aggressive behaviors when integrated back into his or her home environment, school, and society.

In this quantitative study, a non-experimental, causal-comparative pre-posttest after the fact design I collected the data from a residential treatment organization located in Pennsylvania. The dependent variables were aggression and anger control. The

independent variables were (a) level of group participation (attentive, inattentive, and resistant), (b) gender, (c) age, (d) parental involvement, (e) socioeconomic status, and (f) education. Data were analyzed to determine the predictive ability of factors associated with level of group participation and outcome aggression.

In Chapter 2, the literature relative to adolescent residential facility treatment, adolescent group participation, and aggression is reviewed. Chapter 3 focuses on the research design and methodology of the study. In Chapter 4 an analysis of the data is presented. Chapter 5 concludes the study with summary, conclusions, and recommendations for future research.

## Chapter 2: Literature Review

### **Introduction**

A National Survey indicated that 1.6 million adolescents' in the U.S. were arrested in 2010 and 1.5 million in 2011 for erratic aggressive behaviors, thus showing a decline from the 2.18 million adolescent arrests in 2007 (Kennedy et al., 2011; OJJDP, 2014). Although, a decrease in adolescent arrests was detected, an ongoing problem still continues to exist with some youths struggling to function in society without engaging in aggressive behaviors such as larceny theft, simple assault, drug abuse, and simple assault (OJJDP, 2014). OJJDP (2014) indicated that in 2010, there were 71,000 adjudicated delinquents placed into residential treatment facilities, and this does not account for those adolescents' that were admitted through affiliated agencies such as Children and Youth Services and post hospitalization recommendations.

Research pointed out that residential treatment facilities are selected as a last resort intervention for helping adolescents who are at risk for ongoing adjudicated behaviors within society (Kurtz, 2002; Racz, McMahon, & Luther, 2011). These facilities are an alternative to direct placement into juvenile detention centers. Nofle et al. (2011) indicated that residential treatment has been found to reduce the adolescent's initial symptoms at discharge. Adolescents placed in residential treatment are given the opportunity to learn strategies that help them address their out of control behaviors.

Unfortunately, long-term exposure to the erratic delinquent behaviors of fellow residents can increase likelihood for developing additional high-risk behaviors among adolescents residing in these facilities (Shapiro, Smith, Malone, & Callaro, 2010).

Aggressive behaviors often represent a complexity of problems in residential youth care (Knorth, Klomp, Van den Bergh, & Noom, 2007). Knorth et al. (2007) explained that adolescents with aggressive behaviors are one of the reasons that they are admitted into residential treatment. Moreover, the aggressive behavior continues to be an ongoing problem, while in residential care, as a result the adolescent is prematurely removed and placed into a stricter environment (Knorth et al., 2007). In my study, I sought to address an under-researched area related to adolescent treatment within residential facilities. Adolescents with antisocial behaviors have been shaped by a combination of life experiences such as parental involvement, education, social economic status, age, gender, and ethnicity, which consequently can lead to poor anger control (McKinnie Burney, 2006; Vecchi, 2009). Adolescents who struggle with erratic aggressive behaviors have need for a treatment intervention that aids in their behavioral problem.

The purpose of this quantitative study was to examine whether these factors and level of group participation in ART predicted increased anger control and reduced aggression among adolescents living within residential treatment facilities. The independent variables were level of group participation (attentive, inattentive, and resistant), parental involvement, education, social economic status, age, gender, and ethnicity. The dependent variables were aggression and anger control. In this chapter, I describe my strategy for reviewing parental involvement, education, family socioeconomic status, age, gender, and ethnicity literature. I also discuss cognitive therapy, ART, and the model of change theory (Beck, 2006; Goldstein, 1999; Lewin & Gold, 1999). Gaining awareness the characteristics of adolescents aggressive behaviors,

will help others begin to understand the need for intervention that enhance anger management skills.

### **Literature Search Strategy**

To complete the literature review, I gathered information from various peer-reviewed journals using online databases including Thoreau, EbscoHost, PsycArticles, PsycInfo, Academic Search Complete, and Eric. In searching these databases, I used keywords such as *adolescent-aggression*, *youth-aggression*, *anger control methods*, *anger control strategies*, *anger control management*, *adolescent residential facility*, *adolescent residential group therapy*, *cognitive therapy*, and *Aggression Replacement Training*. Many of my journal articles came from peer-reviewed publications such as *Journal of Family Psychology*, *Child Welfare*, *Journal of Clinical Child & Adolescent Psychology*, *Developmental Psychology*, *Residential Treatment for Children & Youth*, *Journal of Cognitive Psychotherapy*, and *Reclaiming Children and Youth*. I carefully reviewed each source for current literature and scholarly research to show originality and evolving studies over time. Sources found to be most relevant to the subject matter was written between the years 1935-2014. Gathering information in scholarly friendly sites is important aspect of literature review phase that provides insight into a study's design.

### **Theoretical Foundation**

Cognitive and change theories assisted in providing some insight into adolescent change effects. Individual change occurs with growth, learning, reasoning, and actions that can be linked to theorists Aaron Beck and Kurt Lewin (Shaffer & Kipp, 2007). Schaffer and Kipp (2007) explained that experiences within an environmental field can

only be defined from the individual's way of viewing the event. Moreover, early childhood events lead to basic beliefs about self and one's world (Shaffer & Kipp, 2007). In the following section, I review cognitive theory and change theory.

### **Cognitive Theory**

One of the most promising forms of treatment in adolescent residential treatment facilities is cognitive therapy (Rosen, 1998). Rosen (1998) indicated that adolescents' expressions while in residential treatment may serve a measure of their illogical cognitions. As a result the treatment team may be able to devise strategies to effect cognitive change and use the adolescent's articulations to track positive therapeutic measures (Rosen, 1998). Aaron Beck, a renowned theorist developed cognitive therapy in the 1960s, this therapy involves helping clients understand how their thoughts, behaviors, and emotional responses to a problem evolve (Beck & Beck, 1995, Beck, 2006). The subtleties that surround cognitive interventions will help provide insight into adolescent illogical thoughts and the significance tracking change throughout residential treatment.

Providing insight into the formation and history of cognitive therapy will help serve as guide to the helping profession. From his clinical and regular observations and experiments, Beck (1999) noted that individuals often exaggerated the frequency of experiences that may have been accidental and accepted them at face value. His intrigue about the problematic thoughts, feelings, and behavior of his clients led him to develop cognitive therapy (Beck, 1999). As cognitive therapy evolved, different techniques were implemented to help individuals with problem solving such as bridging problematic thoughts to pinpointing and correcting those irregular thoughts and new rule structure

(Beck, 1976). Beck (1976) explained that the content of rules is monitoring the experiences and steering the behavioral change through two main axes; danger versus safety and pain versus pleasure. Providing awareness of problematic behaviors through guided change utilizing new rules will help adolescents develop improved perceptions and deter from erratic behavioral outburst.

New rule structure may serve as standards to modify unwanted behaviors, regulate and guide changes in behaviors (Beck, 1976). For example, these new rules may provide a troubled adolescent with the opportunity to evaluate the significance of other peers' actions and interpret how he or she regards those actions based on his or her own values and beliefs (Beck, 1976). Adolescents who are relocated into residential facilities are introduced to new rules, routines, and therapeutic modalities such as ART. As a result the adolescents are exposed to changes outside of their usual environmental, social, and cultural structure. In being exposed to these things, they begin to modify their previous ways of processing information, developing relationships, and identifying patterns through new skill development (Beck, 1976). Beck (1976) explained that by reducing the adolescents dependency on erratic behavioral choices through the induction of new ways to learn from past experiences enhances problem solving and confidence. Helping adolescents identify, work through past experiences, and develop new skills empowers them to make positive changes in their life.

Developing awareness of destructive thinking and behaviors enhances adolescent positive change. Gavita, Joyce, and David (2011) indicated that cognitive therapy is based on the identification of cognitive distortions within the day-to-day thinking of

clients. Aspects of cognitive distortions among adolescents in residential treatment facilities seem to be under debate, subsequently causing a delay in identifying therapeutic processes that will engage them in treatment and encourage positive outcomes (Raftery, Steinke, & Nickerson, 2010). Sharf (2012) described cognitive distortions as a method of processing information that reflects upon erroneous, hopeless, or negative experiences that occur earlier in childhood. Finding methods to help adolescents become aware of their distorted thought processes can be a challenge, but in turn implements the need for the development of working treatment models.

The complexities that evolve during adolescence become a learning process for both the adolescent and the people involved in his or her life. Coban (2013) explained that adolescence is a period of interpersonal conflict with everyday life (Coban, 2013). For adolescents, cognitive distortions tend to become highly exaggerated, rigid, and illogical (Coban, 2013). Coban (2013) argued that interpersonal conflict seems cause conflicting behaviors, disagreements, and opposition among adolescents. As a result of his or her conflicts the adolescent may have difficulty engaging in treatment modalities due to his or her lack of difficulty in understanding the depth of his or her experiences, as well as linking those experiences to relationships among family members, peers, and society (Cone, Golden, & Hall, 2009). Beck (1976) indicated that individuals' learn to label, interpret, and assess according to sets of rules; unfortunately, when these rules are framed in absolute terms or frequently used in an unrealistic manner, maladjusted behaviors may evolve. Developing awareness of misinterpretations between family members may help decrease behavioral outburst and miscommunication.



Diverse behavioral problems and lack of trust seem to be a common feature with adolescents entering a residential treatment facility. Hoffart, Borge, Sexton, and Clark (2009) indicated that early therapeutic alliance has shown to influence outcome expectation among individuals level of involvement in residential treatment. Aspects of residential treatment facilities have been found to be both positive and negative, thus indicating treatment format and collaboration are both part of a systemic process (Dattilio & Hanna, 2012). As a result of these new exposures, the adolescent may have difficulty assimilating to the new rules, thus causing conflicting feelings towards level of therapeutic participation (Beck, 1976; Ensminger & Surry, 2008; Shapiro et al., 2010). Research has found a gap in regard to linking factors associated with adolescent involvement in treatment modalities and lack of anger control during this stage of adolescence (McKinnie Burnie, 2006; Racz et al., 2011). Cognitive therapy allows therapists to develop an understanding of an adolescent's thoughts, interpretations, and self-statements about experiences that exert a powerful reaction to emotions and behavioral response (Knorth et al., 2007). Enhancing awareness of the adolescents' thoughts will in turn help them recognize erratic thinking and behavioral patterns.

Furthermore, these emotional and behavioral functions, such as aggression, cannot be limited to environmental events, but rather emerge through how an adolescent perceives and processes the triggered event (Knorth et al., 2007). Adolescents with poor coping skills and attachment difficulties exhibit increased emotional problems, poor impulse control, anti-social behavior, rejection of discipline, lack of respect for authority figures and rejection of caregivers (Cone et al., 2009). Beck (1976) indicated that

therapist and client can work together to remold unrealistic and unworkable rules to become more elastic and less egocentric. Dattilio and Hanna (2012) found that cognitive therapy and working systemic process between therapist and patient to be one of the primary change agents in treatment. Research has indicated that individuals use cognitive structures to process information and create meaning through making connections, finding patterns, identifying rules, and conceptualizing values (Sharf, 2012). Introducing new rules and empowering skill developing will increase the adolescent's likelihood to connect to positive life style changes.

Cognitive development has been indicated as beginning with relevant childhood relationships, which guide adolescents' core beliefs, understanding conditional rules, and making assumptions that help develop coping strategies (Dattilio & Hanna, 2012). Unfortunately, children who experience negative interactions can develop a poor self-image with those negative experiences become ingrained in his or her belief system (Dattilio & Hanna, 2012). Dattilio and Hanna (2012) found that those rooted negative experiences may cause the adolescent to perceive any situation experienced as negative through automatic thoughts, thus creating an emotional response with a behavior to follow. One of the first steps to developing an understanding of how an adolescent thinks, feels, and responds, is to understand his or her perception of life in general.

Researchers have found that cognitive interventions such as effective problem solving consist of identifying and describing problems, generate positive solutions, select and implement solution all of which challenge the adolescent cognitive distortions (Raferty et al. 2010; Smith, Lochman, & Daunic, 2005). Additionally, interventions such

as modeling, behavioral rehearsal, coaching, family interaction, peers support, relaxation, and anger management have been indicated as effectively reducing anger and aggression (Knorth et al., 2007; Raftery et al., 2010). Feindler and Engel (2011) believed that cognitive processes such as acknowledgements, expectations, interpersonal beliefs, and problem solving seem to be most influential in determining one's response to aggravation, which is a trigger and initiates anger arousal, known as a mediator of aggression. Research has found that utilizing cognitive strategies such as role-plays, self-evaluation, modeling, feedback, reinforcement, and reasoning empower adolescents to build new coping skills all of which coincide with ART group therapy (Amendola & Oliver, 2008; Smith et al., 2005). Therefore, identifying factors that lead to treatment achievements and empirically validating effective treatment modalities such as ART group therapy can help reduce aggressive and antisocial behaviors, helping these adolescents become more productive members of society, and in turn reduce the juvenile detention rate.

### **Change Theory**

The first part of accepting change is starting at the beginning and learning some basic concept of the change model. Research has indicated that the model of change theory consists of three phases: unfreezing, movement, and refreezing (Lewin & Gold, 1999). Lewin and Gold (1999) indicated that a lasting change should have an objective plan that helps the individual move through each phase and this is known as a force field. For example, each level of a force field within the residential facility is reviewed in an adolescent's monthly treatment team meeting and this provides insight as to whether or

not the treatment modality is effective or ineffective. Lewin (1935) believed that behaviors were a complex set of symbolic interactions and forces that play a role in modifying group structures and individual behaviors. In providing awareness of the phases of change will help adolescents begin understand and recognize their changes as they evolve.

Adolescents who become aware of their behaviors develop new perceptions to aide in making positive choices in those behaviors. As a result, Lewin proposed that individual behaviors played a role within the forces of the field and implementing phases of resolving social conflict through enabling learning (Burnes, 2004, Lewin, 1935). In return, this encouraged individuals to understand and restructure their perceptions of the environment around them (Burnes, 2004; Lewin, 1935). Ensminger and Surry (2008) described unfreezing as examining one's readiness for change, through awareness of their assumptions', principles, ethics, and outlook. Adolescent readiness to change is exhibited in new behavioral patterns and actions.

New behavioral patterns and actions lead to new skills and readiness to move forward in treatment. The second phase of the model is called movement and is described as introducing the change that the residential treatment facility would like to implement, then taking the initiative to challenge and uncover the adolescent's barriers (Burnes, 2004; Ensminger & Surry, 2008). Once the change has been implemented, refreezing occurs as a new level of permanency or force field to help the adolescent adjust to the change (Burnes, 2004; Ensminger & Surry, 2008; Lewin & Gold, 1996). Amendola and Oliver (2008) indicated that empowering adolescents to uncover barriers through

psychoeducation group therapy helps to increase the adolescent's ability learn. This, in turn, facilitates change in the adolescent's ability to function in society and in his or her home environment without aggression or extreme violent behaviors (Amendola & Oliver, 2008; Sharf 2012). Cognitive interventions, along with change, seem to provide support for individuals in residential treatment facilities, due to enhancing awareness of change through the therapeutic processes utilized (Blakely, Bruggink, Dziadosz, & Rose, 2013). Blakely et al. (2013) found that combining evidenced based practices improved overall functioning such as increased awareness of how thoughts have an impact on emotions and behaviors. Empowering awareness of adolescents behavioral choices, in turn, allows them to learn and apply new skill development.

### **Literature Review**

Research has found various factors such as inadequate treatment modality, parental involvement, education, social economic status, age, gender, and ethnicity that may attribute to ongoing adolescent aggressive behaviors while in in residential treatment (Knorth, Klomp, Van den bergh, & Noom, 2007; McKinnie Burney, 2006). Knorth et al. (2007) implied that adolescents, who continue to engage in aggressive behaviors, tend to be transferred to a stricter environment. This resulted in increased fear, anger, and uncertainty in developing relationships with the residential treatment team and becoming more resistant to program therapeutic interventions (Knorth et al., 2007). Kalke, Glanton, and Cristalli (2007) found that becoming aware of factors that lead to ongoing adolescent aggression and level of participation in treatment will help the treatment team, family, and adolescent move towards a more respectful relationship. The following section will

review Aggression Replacement Training (ART), parental involvement, education, social economic status, age, gender, and ethnicity.

### **Aggression Replacement Training**

Aggression Replacement Training (ART) is an empirically validated and theoretically grounded intervention that introduces multimodal anger management components that empower adolescents to modify their own anger through prosocial skill development (Goldstein, Glick, & Gibbs, 1998). Goldstein found that the need for empirically validated intervention such as ART became more evident due to the noticeable increase of aggression among adolescents in society and the public outcry for help to reduce and prevent aggression within the community and schools (Goldstein, 1999; Reddy & Goldstein, 2001).

Given the diversity among adolescents within the community and residential treatment facilities, Goldstein believed that there were effective and ineffective strategies in reducing aggression (Goldstein, 1999). Goldstein (1999) indicated that a series of perspectives on adolescent violence intervention elaborated on complexity, situation, dogmatism, and aggression as a learned behavior as a guide to effective outcomes. Goldstein found that diverting adolescents away from a life of crime, by engaging family in treatment and providing flexibility are crucial in maximizing the achievements of the adolescent within the family system (Calame, Parker, Amendola, & Oliver 2011, Goldstein, 1999). Family members, along with affiliated agencies, can be positive transfer coaches and reinforce new skill development (Calame et al., 2011). Reddy and Goldstein (2001) focused on outlining strategies to transfer, motivate, and maintain skill

development enhanced the efficacy of ART when utilized in a wide range of adolescent treatment settings.

ART consists of a mission and goal that approaches the complexity of adolescent aggressive behaviors through multimodal psychoeducation interventions that enhance pro-social behaviors (Reddy & Goldstein, 2001). Reddy and Goldstein (2001) provide an overview of ART, as empirically based multimodal intervention, as well as how to transfer, maintain acquired skills, and enhance trainee motivation. Group formation is usually involuntary and the caregivers responsible for the adolescent's education and well-being usually make the referral (Reddy & Goldstein, 2001). Reddy and Goldstein (2001) indicated that the group setting should be safe and free of degrading comments all of which falls into the trainer's hands to provide the support necessary through teaching modeling, and protectors.

The three components of ART consist of skillstreaming, anger control, and moral reasoning, all of which provide a conjoint effect to reduce aggressive behaviors among youth with diverse behavioral issues (Reddy & Goldstein, 2001). Skillstreaming has been described as a systematic psychoeducation intervention that introduces a 50-skills related to prosocial behaviors, thus focusing on a curriculum that is outlined to help guide the facilitator and adolescents during group therapy (Goldstein & McGinnis, 1997; Reddy & Goldstein, 2001). Skillstreaming group strategies include: (a) introduction/definition of skill, (b) interactive questioning, (c) facilitator/co-facilitator model the skill (bubble talk steps and role-play), (d) facilitator receives feedback from group, (e) bubble-talk/ role-plays (group members), (e) peer group feedback, (f) open discussion/encouragement, and

(g) homework assignment. Two important steps in group therapy are the adolescent's ability to bubble talk and role play his or her chosen scenario utilizing the skill of the week (Reddy & Goldstein, 2001). Bubble talking is similar to self-talk; the adolescent talks through each step of the skill prior to role playing, which is a cognitive strategy to help the adolescent regulate actions execute new skill automatically (Amendola & Oliver, 2013). Role playing consist of modeling the skill by following the outlined steps provided on the back of the weekly skill card (Reddy & Goldstein, 2001).

The anger control training group addresses emotional responses that influence the adolescent's ability to maintain self-control when in a negative situation (Amendola & Oliver, 2013; Reddy & Goldstein, 2001). Reddy and Goldstein (2001) described anger control groups as behavioral steps that are identified in a series of ten sessions.

Subsequently, these steps are identified as (a) triggers- the activating event is external and the initial thought at the moment in the internal trigger (b) cues- internal and external physiological understandings that one is experiencing in that moment, (c) anger reducers- deep breathing, pleasant imagery, and counting backwards are introduced as strategies to help the adolescent who may be struggling in any setting, (d) reminders- de-escalating self-talk to help decrease anger, (e) thinking ahead- if-then thinking- to help further de-escalate in the moment, (f) skillstreaming- adolescent chooses a skill to help him or her break the cycle of anger and step out of the circle, and (g) self- evaluation- teaches the adolescent to monitor and assess his or her choices throughout the cycle.

The third component of ART is moral reasoning, which entails introducing the group to moral dilemmas, thus allowing the diversity of perceptions or cognitive conflicts



to be viewed at different levels (Reddy & Goldstein, 2001). This, in turn, enhances moral reasoning in “what is right” and what is wrong.” Amendola and Oliver (2013) indicated that moral reasoning encourages the adolescent to adopt prosocial morals to enhance his or her ability to interact within society, while displaying higher levels of principles. McKinnie Burney (2006) indicated that aggression comes in two forms, proactive and reactive with both displaying different symptoms.

Adolescents, who want instant gratification, struggle with low self-control, and have a need for power and recognition, tend to fall in the proactive aggression category (McKinnie Burney, 2006). McKinnie Burney (2006) explained that the adolescents who react immediately with a defensive response, lack close relationships, and internalize anger seem to fall in the reactive aggression category. Hollin (2003) indicated that aggression is a learned behavior through observation, direct experience, and practice. Residential treatment facilities, state agencies, community agencies, and the educational system utilize ART group therapy to enhance the prosocial skill development (Amendola & Oliver, 2010). Amendola and Oliver (2010) evaluated strategies and techniques of ART utilized in three studies and found that the effectiveness of ART has shown significant decreases in aggressive behaviors outcome results. ART has remained a strong intervention approach for over twenty years, therefore indicating fidelity and effectiveness of trainers, teaching, modeling, and mentoring the adolescents as an important part of group empowerment (Amendola & Oliver, 2010).

A two year longitudinal study of ART in an Australian youth detention center produced a significant reduction in aggressive behaviors, thoughts, and cognitive

distortions (Currie, Wood, Williams, & Bates, 2012). The purpose of the Australian study was to address potential limitations utilizing psychological measures as the key component to determine the applicability and culture relevance of the American Aggression Replacement Training (ART) program (Currie et al., 2012). Currie et al. (2010) explained that during the literature review process, most of the literature consisted of evaluations of ART instead of research studies, thus leading the researchers to address the potential limitation in psychological methods as a gap in research.

The sample in the Currie et al. (2012) study was boys ( $n=20$ ) with an age range of 18 years to 20 years-old placed in detention for at least three months or longer for violent related offenses. The participants received a pre-treatment intake, post-test, and follow-up evaluations at six months and twenty-four months (Currie et al., 2012). Currie et al. (2012) utilized five self-report instruments, one of which was the Aggression Questionnaire (AQ) that will be utilized in the present study to measure overall pre-test and post-test outcome results. The Australian study resulted in the following scores: (a) pretest AQ score (102.25), (b) post-test (89.25), (c) six- month (83.26), and (d) twenty-four months (85.14), thus indicating a significant decrease in aggressive behaviors. Currie et al. (2012) indicated that the reduction in aggression outcome scores supports the effectiveness of ART and the components that address cognitive distortions that play a role in poor behavioral choices.

A similar study completed in Thailand revealed little evidence supporting the effectiveness of ART (Wongtongkam, Day, Ward, & Winefield, 2014). Wongtongkam et al. (2014) indicated that twenty-three students (15 years-old) participated in the modified

ART intervention and was compared to twenty-four students who did not receive the intervention, with results that revealed little evidence of effectiveness. One implication may be attributed to the use of a modified version of the ART curriculum on vocation college students, which supports the importance of fidelity and effectiveness of receiving ART training. Wongtongkam et al. (2014) indicated that the ART curriculum material was modified to be linked to meet the Buddhist concept of karma. The purpose of the study was to find a treatment modality to help decrease the high volume of violence among youth in Thailand.

Two instruments were utilized with the participants in the Thailand study, The Pittsburgh Youth Study's self-report measure of serious violence and the State-Trait Anger Expression Inventory-2 (STAXI-2) were given as a, pretest, and post-test, with follow up administrations at one month and three months (Wongtongkam et al., 2014). Wongtongkam et al. (2014) found no clear pattern change between the two groups, but indicated that 85% of the post interviews, where the participants indicated they felt they were able to calm themselves much better when bullied at school. Furthermore, Wongtongkam et al. (2014) indicated that although there were no clear reduction in anger levels, the students believed that they had learned to control angry emotion, thus improving thoughts and consideration of the consequences of impulsive actions. Transfer of training and encouragement are positive effects of ART, thus teaching adolescents to utilize skill outside the group setting (Amendola & Oliver, 2013). Amendola and Oliver (2013) indicated as a result of new skill development, the adolescent become empowered to strengthen his or her prosocial skills within the community setting.

## **Parental Involvement**

Parent-child interactions attribute to their child's choices in behaviors, as well as how the parent(s) react to those behaviors (Sheeber et al., 2009). Sheeber et al. (2009) indicated that parent-child conflict increases during adolescence due to the parent acknowledgement of internalizing disorders such as depression in a harsh and unsupportive manner. When parents have exhausted all outpatient resources they begin to look at interventions such as the juvenile system, children and youth services, inpatient mental hospital hospitalization, and residential facilities (Brown, Barrett, & Ireys, 2010; Tahann et al., 2010). Holstead, Dalton, Horne, & Lamond (2010) indicated that residential programs provide adolescents an opportunity to stabilize their unpredictable behaviors and emotional instability. Research has found that family involvement was a critical variable in adolescent treatment achievements (Holstead et al., 2010). Brown et al. (2010) indicated that residential treatment has the highest prospective for positive outcome when adolescents and families are engaged in family-driven, youth-guided treatment modality.

Aspects of family-driven behavior consist of the parents as the primary decision makers in the adolescent treatment, thus creating a sense of empowerment among the parent-adolescent relationship (Brown et al., 2010). Calame et al. (2013) indicated that the effective use of skills training with caregivers and adolescent such as ART provides support and empowerment to be open to work on needed problem resolution. Subsequently, in empowering family members and adolescents to work on anger provoking behaviors teaches prosocial skills to enhance family functions in a holistic

manner (Calame et al., 2013). Moreover, working with the family instead taking a judgmental approach for the adolescents behaviors will empower the family to work as a team rather than against one another (Garfat, 2011).

### **Education and Social Economic Status**

Education plays an important role in successful development of prosocial skills, academic achievement, and higher levels of self-esteem through positive interactions (Gaskins & Mastropieri, 2010). Gaskins and Mastropieri (2010) indicated that adolescents who are in out of home care reportedly display low academic performance below their grade level (Gaskins & Mastropieri, 2010). Gaskins and Mastropieri (2010) found that research on academic programs within residential facilities appear to be unclear, insufficient, and lack academic results due to the limited research. Moreover, research completed in Ontario found that a small number of studies have looked at the educational experiences of adolescents, while they resided in residential treatment facilities (Gharabaghi, 2011). Gharabaghi (2011) indicated that performance in residential care is usually not tracked by specific subject areas, except for attendance, suspension, and expulsion, thus leaving a gap in targeting educational support in specific subjects or empowering the adolescents on his or her accomplishments.

Aggressive behaviors and learning difficulties have led to academic dysfunction that seem to evolve from feelings of shame, ridicule, and social exclusion by other peers (Aslund, Starrin, Leppert, & Nilsson, 2008). Subsequently, Aslund et al. (2008) pointed out that many of the adolescent's feelings of humiliation may be considered a result of the socioeconomic status of the family and social standing (Aslund et al. 2008). Chen and

Vazonyi (2013) indicated that adolescents who are not concerned with their future become more unenthusiastic with school and become more vulnerable to erratic behaviors. Moreover, school location and socioeconomic status have been linked to lower-levels of academic achievement, high drop-out risk, and a lower sense of belonging (Chen & Vazonyi, 2013). Chen and Vazonyi (2013) indicated that school atmosphere with shared beliefs, values, and attitudes empower interactions among school students.

Facets of residential facilities seem to lack a foundation of cohesiveness due to the diverse group of adolescent with aggressive behaviors, family socioeconomic status, lack of parent involvement, and shaming experiences (Aslund et al., 2009; Gharabaghi, 2011). Dunnen et al. (2012) indicated that early predictors of adolescent resilience such as gender, age, ethnic status, communication skills, and family involvement increase successful residential outcome. Prior outcome studies indicated that pretreatment factors have been linked to positive completion of residential treatment compared to those who struggle in the program and do not complete it (Dunnen et al., 2012). Kools and Spiers (2002) indicated that adolescent change is inevitable due to characteristics associated with puberty that increases cognitive and moral development. Additionally, these cognitive and moral changes help the adolescent to define his or her identity, increase independence, and social roles (Kools & Spiers, 2002). Coll, Thobro, and Haas (2004) indicated that psychosocial changes that occur between the ages of 13 to 18 years-old are the most stimulating and complex period of time. This parallels with promoting school based curriculum that teaches

the teachers how to deal with disruptions and behaviors, starting at pre-school and continue into middle school, by implementing social skills and altering attitudes that lead to violence through empathy, impulse control, and anger management (Amendola & Scozzie, 2004).

### **Age**

Adolescent development is a time of growth and maturation; one of the many changes is brain development, specifically in the frontal lobe area, which plays a role in the process of organization, planning, self-control, judgment, and regulation of emotions (Broderick & Blewitt, 2012, p. 292). Broderick and Blewitt (2012) inferred that hormone changes are rapid during adolescence and can cause heightened sensitivity to stress and increased vulnerability to for psychiatric disorders around age 13. This coincides with the age range of 12 to 18 years-old adolescents placed in residential treatment with diverse symptoms (Amendola & Oliver, 2011). Hawley (2011) indicated that the evolution of adolescent social dominance, aggression, and cooperation are innate to group living. Previous research has indicated that conformity to normative rules tends to increase in early adolescence and decline gradually in later adolescents as group ties loosen (Gavin & Furman, 1989).

Early adolescent cognition changes occur at approximately 11 or 12 years-old. This is known as the beginning of formal operational thought, which takes place in Piaget's cognitive stages of development (Broderick & Blewitt, 2012). As formal thinking emerges in adolescents between 16-18, their problem-solving strategies and abilities differ from those of younger adolescents (Broderick & Blewitt, 2012).

Group therapy models such as Aggression Replacement Training (ART) follow specific outlines to teach new skills to a group of adolescents who vary in age (Amendola & Oliver, 2011). Therefore, given the cognitive differences between age groups, does the age of the adolescent play a role in treatment outcome? Specifically, does an adolescent at 12 years-old perceive the information differently than a 17- year-old? (Broderick & Blewitt, 2012).

Research indicated that early puberty maturation has consequences of its own this has been found as a secular trend result itself, due psychosocial development and reproductive maturity (Hawley. 2011). Moreover, understanding the fundamental differences in peer groups, age segregation that occurs within society, individuals group their children by age, education level, and within the family dynamics (Hawley, 2011). Hawley (2011) described maturity gap as a time when adolescents are “chronologically hostages of a time warp between biological age and social age” (p. 312). Subsequently, developing the ability to identify his or her individual needs, and adjusting to those needs before being introduced to overall group needs (Hawley, 2011). Hawley (2011) implied that aggregating adolescents that are in the early pubertal stage with those further along in the puberty stage can cause a mismatch in the adolescent’s ability to understand overall group routines and skill development techniques. Additionally, gender and ethnicity may also play a role in identifying the adolescent’s area of needs, given the difference in individual perceptions and response to treatment (Brack, Huefner, & Handwrek, 2012).



**Gender**

Gender differences have been found in past research to be predominant in various diagnoses, in comorbidity of childhood disorders, and in response to treatment (Handwrek et al., 2006). Handwrek et al. (2006) indicated that boys tend to have a higher prevalence rate in externalizing disorders than females who exhibit more internalizing disorders. Although, these differences have been recognized, researchers have had difficulty establishing when developmental and etiology differences emerge (Handwrek et al. 2006). Handwrek et al. (2006) indicated that this has led to an area apt for investigation youth in residential care, given that many of the treatment models utilized were established to serve boys externalizing behaviors such as aggression. Brack et al. (2012) indicated that the Juvenile Justice and Delinquency Prevention Act require states to address gender bias among services provided to adolescents. Service providers such as residential facilities have begun to address these gender and ethnicity-based treatment needs through developing empirical models such as the Aggression Replacement Training (ART) (Amendola & Oliver, 2010; Brack et al., 2012). Ethnicity, along with gender, presents the need for careful delivery of treatment models to provide a sense of respect of the adolescent's values and beliefs (Pazaratz, 2005).

**Ethnicity**

Maintaining a neutral understanding of cultural differences among adolescents in residential treatment facilities may be trying at times, given that the program tends to have structured routines (Pazaratz, 2005). Holleran and Steiker (2005) indicated that becoming aware of, and responding to the diverse needs of adolescents, allows for

positive outcome responses to change. Developing a strength-based treatment perspective and implementing new skills into a group serve as an anchor for understanding skill development among diverse groups (Yasui & Dishion, 2007). One of Goldstein's 1998 goal was to meet the needs of a diverse group of adolescents struggling with understanding and living everyday life, through introducing ART that implemented without bias (Amendola & Oliver, 2010; Goldstein, 1999).

### **Summary**

In this chapter, the literature relevant to factors associated with and adolescent's level of group participation, aggressive behaviors, and theoretical foundation of the present study was reviewed. The theoretical foundation and rationale for the variables for the study were also included. Adolescents who struggle with interpersonal relationships, aggression, and antisocial behavior have been placed in residential treatment facilities as a last resort intervention (Amendola & Oliver, 2010; Kurtz, 2002). Different treatment modalities have been introduced in order to help troubled youth deal with everyday life. Achieving positive outcomes depends on the factors associated with the adolescent such as the way he or she reacts and copes with those experiences (Zimmer-Gembeck & Skinner, 2008). Although past researchers worked diligently to help close the gap in understanding the variables that attribute to adolescent erratic and aggressive behaviors, this has been found to be challenging (Brack et al., 2012). Research found that moral reasoning combined with skillstreaming and anger control training can help provide an opening to the first step of change, through identifying, assessing, and challenging self to

make a change (Goldstein, Glick, & Gibbs; Goldstein & McGinnis, 1997, 1998; Reddy & Goldstein, 2001).

Residential treatment was indicated as both positive and negative outcome specifically, adolescents can be exposed to other erratic behaviors and therefore learn by affiliation, thus increasing unwanted resistance to treatment through ongoing exposure to adverse experiences (Dishion, Poulin, & Burraston, 2001). On the other hand, researchers have found that a working residential therapeutic relationship, effective problem solving, modeling, reinforcement, and family involvement tend to help some adolescents (Amendola & Oliver, 2010; Gifford-Smith, Dodge, Dishion & McCord, 2005; Zimmer-Gembeck, & Skinner, 2008). The importance of understanding why some adolescents respond to treatment, while others may not, continues to lead to a gap in understanding what format of treatment needs to be modified in order to meet the individual needs of adolescents. The importance of fidelity in facilitators and adolescents following the ART group instructions has stood out in the literature review as promoting positive outcome behaviors, but cannot account for the adolescents within the same group setting that experience negative outcome behaviors.

Aggression Replacement Training (ART) introduces a new rule structure to help adolescents focus on replacing maladaptive thinking with positive schemas, implementing new skill development, as well as learning new coping strategies. The current literature review revealed that various factors can attribute to the adolescent's level of participation in group treatment and how he or she may respond to group treatment modality (Gifford-Smith, Dodge, Dishion & McCord, 2005; Zimmer-Gembeck,

& Skinner, 2008). Although, aggression replacement training is offered individually and in a group format, an ongoing question remains regarding what variables predict the level of group participation and in turn, result in a decrease in aggression. In the present study I examined different variables that may predict the level of group participation using aggression replacement training, the model of change, and cognitive therapy as the theoretical foundation. I am mindful that a number of factors influence behaviors of adolescents in residential treatment facilities. Nonetheless, I concluded from this review that further exploration between variables that predict adolescent level of group participation and a decrease aggression was necessary. In Chapter 3, the research methodology will include a discussion of the research design, rationale, population, sample procedures, and data analysis plan.

## Chapter 3: Research Method

### **Introduction**

The purpose of this quantitative study was to examine whether the adolescents demographic variables (age, gender, family socioeconomic status, parental involvement, ethnicity, and education), and level of group participation in ART predict increased anger control and reduction of aggression among adolescents living within residential treatment facilities as indicated by archival Aggression Questionnaire (AQ) overall outcome data. The AQ is a self-rated assessment questionnaire that is administered to adolescent at the intake and exit interviews with their mental health therapist.

A casual-comparative pretest and posttest design was chosen because it allowed me to gauge participants' responses to treatment using their treatment AQ outcome scores. Moreover, utilizing the AQ pretest and posttest score differences was an important aspect in my study because it provided useful data for others into an adolescent's individual responses to after care treatment modalities. Equipped with these data, counselors and others may be able to empower adolescents in treatment to maintain an aggression free lifestyle through anger management training (Goldstein, 1999).

In this chapter, I will discuss my research design and rationale, which will help readers better understand the overall decisions made for my study. I will also describe my procedures for identifying my study population, sampling, and developing instrumentation procedures. Afterward, I describe threats to validity and potential ethical challenges that were addressed to overcome any barriers that arose during the study.

### **Research Design and Rationale**

In my study, I explored the relationship and predictive nature of the independent variables for my study. These variables included age, gender, family socioeconomic status, parental involvement, ethnicity, education, and level of group participation upon the dependent variables of aggression and anger control, as measured by archival outcome data from the AQ. I hypothesized that the independent variables can be associated with the participation level in a treatment protocol designed to increase adolescent anger control and reduce aggressive behaviors within residential facilities. My research questions were designed to filter out the differences in group participation levels (i.e. attentive, inattentive, and resistant) and the predicting factors that attribute to decreased erratic aggressive behaviors and increased anger control as measured by overall AQ score differences. Moreover, whether or not the specific independent variables predict reduction in the participant's assessment risk and attentive participation level in ART over and above the remaining factors.

A quantitative causal-comparative pre and posttest design was used in my study. By using this design, a researcher is better able to discover links between independent and dependent variables after the event has already occurred (Salkind, 2010). One of the goals of my study was to understand how group treatment modality may enhance positive outcome responses among some, but not all, adolescents who are in the same peer group in treatment facilities. Through the exploration of factors that can be linked, researchers using casual-comparative designs seek to determine predictability for pre-existing differences in groups of individuals (Schenker & Rumrill, 2004). Schenker and Rumrill

(2004) explained that examining pre-existing differences allows the researcher to determine whether specific variables have an effect on the outcome.

Reviewing after the fact results expands upon the missing links to the basis of the initial event. Researchers using a casual-comparative approach start with a cause; then, they investigate subsets of participants on all the factors associated with the existing condition (Salkind, 2010). For example, adolescents accepted into residential treatment may have an existing condition such as erratic aggressive outbursts, which is one of the dependent variables in my study that was measured through pretest analysis. Once the pretest measure was complete the adolescent was placed into aggression replacement training group therapy along with other peers with an age range from 12-18 years-old three times a week until his or her individual treatment plan goals are reached. Providing insight into existing condition will help others implement interventions that could help adolescents make positive behavioral changes.

One way of implementing interventions is to look at overall adolescent group and filter out predicting factors that aide in positive group outcome experiences. Salkind (2010) explained that one goal in using causal comparative approach is to examine whether the independent variable has an effect the on the dependent variable by comparing two or more groups of a sample population that has already experienced the event. For example, in my study the groups are formed and have been scored for participation level by a point system ranging from one to three, with the score of three meeting all the group expectations. In utilizing a point scale it allowed for the adolescents to be scored on their individual participation during group session.

Certain elements within in a study cannot be influenced due to set standards. Schenker and Rumrill (2004) indicated that often examining factors within a casual-comparative study cannot be experimentally manipulated for practical or ethical reasons. Moreover, individual in groups such as gender and race can be compared to others, but cannot be subject to experimental changes (Schenker & Rumrill, 2004). For example, my study explored the relationship and predictive nature of the independent variables ethnicity, age, and gender, which cannot be manipulated due to being identifying demographic variables.

Given that my study includes variables that cannot be manipulated lead me to choosing a specific research design. Salkind (2010) explained that casual-comparative research provides a feasible method of research that can be conducted when other methods will not work. Research indicated that an independent variable such as ethnicity because, according to Salkind (2010) researchers cannot manipulate a participant's cultural identity (Salkind, 2010). Moreover, it is an American Counseling Association (ACA) ethical code violation to impose one's personal values onto clients during the research process (ACA, 2014). An alternative method in a causal-comparative study is to group the sample according to ethnicity and then administer assessment (Salkind, 2010). This approach is feasible for my study because the assessment has already been administered individually upon intake and during the discharge process.

As a result, this provides an opportunity for me to group the sample according to variables such as age, gender, ethnicity, education, or socio-economic status. Salkind (2010) elaborated that researchers may discover that one ethnic group scores higher on



certain predictive factors than another group; thus, caution should be used when interpreting results. Given that several of the factors in my research design were non manipulative, I had to interpret each predictive factor or combination of factors cautiously without bias or judgmental language.

Another resource constraint was controlling for factors, other than ones which I had operationally defined, that may have influenced the dependent variable (see Salkind, 2010). For example, I hypothesized that age, gender, and education are predictive factors for attentive participation level over and above the variables of family socioeconomic status, parental involvement, and ethnicity. Moreover, if the other variables such as family socioeconomic status, parental involvement, and ethnicity can be ruled out, the case for age, gender, and education predicting attentive participation level will be much stronger. Therefore, causal-comparative would be most appropriate method of research because the independent variables age, gender, education, family socioeconomic status, parental involvement, and ethnicity cannot be manipulated. Additionally, these factors are important to be explored in relationship to anger control and aggression in youth within residential treatment facilities to facilitate treatment success.

### **Methodology**

In this section, I discuss the methods associated with gathering information pertaining to the target population. An important part of any study is to provide an overview of the participant selection, data retrieval process, and calculation of sample size. Lastly, I provide an overview of population location and residential treatment facility.

### **Population**

This quantitative study utilized a sample from the target population of adolescents who have completed at least a three month residential treatment in one of five residential facilities associated with Perseus House Inc. located in Pennsylvania. Perseus House Incorporated is a well-known residential organization and collaborative learning center that is located in Pennsylvania and is known to utilize diverse treatment modalities, while providing a safe environment for the adolescents placed in the organization's care. Sample data were retrieved from archival records on selected participants that exist, because these adolescents are a protected population and it can be difficult to get IRB approval for dissertation approval. In addition, since the data was previously collected and was current, it was prudent and effective to use archival data.

In determining my sample size, I was able to retrieve similar Cohen's  $d$  dataset study results (Mager, Milich, Harris, & Howard, 2005), ( $M=12.7$ ;  $SD=.97$ ), ( $M=12.5$ ;  $SD=.64$ ), then utilized the Cohen's  $d$  formula to figure out the estimated effect  $12.7 - 12.5 = .2$ . Then averaged the estimated standard deviation  $.97 + .64 / 2 = .805$  and applied formula Cohen's  $d$ :  $.2 / .805 = .2484$ . In apply this information to G\*Power computer program (Softpedia, 2014),  $F$  tests family, the suggested sample size for a one-way ANOVA with an alpha of .05, power of .80, and effect size of (.25) was 159 participants, which would provide an unequal sample size of  $n=31.8$  among the five residential sites. Subsequently, an additional participant will be added to the 159 required ( $159 + 1 = 160$ ), to provide an equal number of participants  $n=32$ , among the five residential facilities.

Members of the target population for my study were placed within the residential treatment facility by outside services such as Children Youth Services, mental health caseworker, parents, and juvenile court system due to inability to function within society. Geurts, Boddy, Noom, and Knorth (2012) explained that residential care has been seen as a last resort, but argued that residential provisions serve as an intervention for adolescents with complex and challenging needs. One of the main aspects of residential facilities is to provide a safe and therapeutic environment for at risk youths placed outside of the home environment (Geurts et al., 2012). Guerts et al. (2012) indicated that residential care incorporates diverse treatment modalities such as special education, recreational activities, individual, family, group, and pharmacology therapy in a structured environment.

Perseus House Incorporated was selected for my study as they are known as the Aggression Replacement Training site and have been utilizing stages of this treatment modality since Arnold Goldstein began the developmental stages (Amendola & Oliver, 2010). Amendola and Oliver (2010) explained that ART began as one treatment modality, skillstreaming and developed into three component model adding anger control and moral reasoning. Another aspect of Perseus House is the organization's unique ability to reach out to the community and help troubled youth and their families within Pennsylvania since 1971. The organization began from a single home located on west 26<sup>th</sup> street in Erie, Pennsylvania and has expanded to a multi- facility placement service that can provide sanctuary with 82 beds housing boys and girls (Perseus House, 2015).

### **Sampling Procedures**

The following section discussed sample strategy, sample size, instrumentation, and materials, so future researchers can replicate my study. Frankfort-Nachmias and Nachmias (2008) explained that the sampling strategy and size provide a representative sample of a population that may produce results similar to those from the utilizing an entire population being explored. The instrumentation and materials were utilized to explore the research study and used as a guide to help the researcher explain each step taken during the research process (Frankfort-Nachmias & Nachmias, 2008)

### **Sampling Strategy**

Archival data was retrieved from five Pennsylvania facilities belonging to the same organization. Each residential facility houses twelve adolescents, separated by gender. The residential facilities include aggregated youth who been adjudicated or diagnosed with diverse mental health issues such as suicidal ideation, self-harming, homicidal threats, conduct disorder, and other erratic behaviors. Therefore, the best sampling strategy for this quantitative research study was a stratified sampling design, which allowed the researcher to use available information on the population to divide into groups, such as group participation level (Frankfort-Nachmias & Nachmias, 2008).

In my study an identified sample was retrieved from archival data cases that were stored in a secure room at the residential organizations central office. Another sampling strategy that was utilized in selecting an even amount of cases from each of the five residential sites, as this allowed for equal selection of the population. A third sampling strategy utilized was participation status, as this allowed the researcher to categorize the

defined group participation level (attentive, inattentive, and resistant). Consequently, a disadvantage of categorizing level of group participation is it may cause unequal group levels for analysis, thus causing skewed outcome data. On the other hand, the impact of the sample categorization will help distinguish the difference in adolescent participation levels for future research. A fourth sampling criteria was the participants would have to be in residential treatment facility for three months, as this is the amount of time to complete one ART group sequence. A final sampling criterion was to utilize data retrieved within the last two years, as this was current and up-to-date post residential treatment records. Subsequently, a disadvantage of setting a time limit is I may not have enough cases (160) in the original data and would need to go back further than two years.

For the purpose of my study, three levels of participation were identified and defined as attentive, inattentive, and resistant. The treatment expectations that have been identified for the attentive group are: the adolescent attends all groups, completes assigned homework, participates in discussions, volunteers to help other peers, and participates in role-play activities. Treatment expectations that have been identified for the inattentive group include: adolescent attends groups, but only participates when prompted, and refuses to engage in role-play activities. Treatment expectations that have been identified for the resistant group include: adolescent attends group, but disrupts peers, and refuses to follow group rules.

### **Sample size**

A statistical power analysis was conducted with G\*Power computer program to determine the sample size required for my study (Softpedia, 2014). Given that my study

used two types of data analyses ANOVA and Multiple Regression, I provided a calculated sample size from two calculations. The sample size for the Multiple Regression was calculated with G\*Power using the frequency test (*F*-test) family to assess whether the expected values within several pre-defined groups differ from each other (Field, 2009). A medium effect size  $r = .30$  was suggested to account for nine percent of the total variance, given that I was unable to find literature similar to my study I utilized the recommended medium G\* Power effect size of  $f^2 .15$  (Field, 2009; Softpedia, 20014). The level of significance was set at .05 alpha, as it provides a probability that there will only be a 5% chance that there may be a Type I or Type II error (Field, 2009). A statistical power of .80 was utilized, which provided an 80% chance that an effect may be detected if one genuinely exists (Field, 2009). Based on output parameters of non-centrality 15.450, critical *F* 2.107, numerator *df* 7, denominator *df* 95, and a sample size of 103 participants.

The second G\*Power calculation was utilized to calculate the ANOVA sample size. A one-way analysis of variance (ANOVA) was calculated using the *F* tests family setting, which provided input parameters effect size .25, error probability .05, statistical power 0.80, and number of groups 3. This provided output parameters of non-centrality 9.937, critical *F* 3.054, numerator *df* 2, denominator *df* 156, and a sample size of 159 participants.

After, reviewing the calculations of the G\*power results and given that the main analysis was an ANOVA, I chose the higher sample size of 159 participants. Given that there are five residential sites, I then divided  $5/159=31.8$  adolescent files need from each

site. To accommodate this sample size and provide an equal amount drawn from each site, I then added an additional one participant to the 159, which will total 160 participants divided by five residential facilities, which provided a stratified sample of 32 participants from each site, respectively.

### **Archival Data Procedures**

Archival data was utilized in this casual-comparative pretest and posttest research study to explore the relationship and predictive nature of the independent variables for my study consisted of age, gender, family socioeconomic status, parental involvement, ethnicity, education, and level of group participation upon the dependent variables of aggression and anger control, as measured by archival overall outcome data from the Aggression Questionnaire (AQ). The procedures for recruitment participant case records, and data collection were important because they allowed the researcher to gain the perspective of the participant's response to treatment through his or her treatment overall outcome scores, thus providing insight into the chosen treatment modality to enhance anger control and decrease aggression among adolescent with erratic aggressive outbursts. The recruitment of the sample for my study derived from treatment records stored in a residential treatment organization located in Pennsylvania. Important aspects of collecting sample data from archival records include the participants exist as a protected population and it can be difficult to get IRB approval. Subsequently, enhancing the importance of maintaining participant confidentiality and not using identifying information made it prudent and effective to use archival data.

Data collection was conducted utilizing stratified sampling design, which allowed the researcher to use subjective judgment in selecting the sampling units that appear to be representative of the population (Frankfort-Nachmias & Nachmias, 2008). One criterion in selecting the sample was the participant had to be in the residential treatment program at three months, which would allow for the participant to complete one cycle of the aggression replacement training group treatment modality. Another process of the data collection was retrieving 32 participants from the five residential facilities affiliated with Perseus House Incorporated; this was time consuming, as each of the participants records was read to retrieve the specific de-identifiable data needed to complete the study. One critical aspect of the data retrieval was to remove the participant identifying information and provide a numerical code; for example, I utilized a number such as one for the first participant when I entered the data into the SPSS program for analysis. Given that there are several independent variables being utilized in my study it was important to create a process that can be replicated in future research studies. Gaining permission to access the archival data consisted of meeting with the Perseus House executive director to discuss the study and use of the Aggression Replacement Training format and pre-posttest overall outcome data. The executive director and I developed a data use agreement, which is provided in (appendix A-1) of this dissertation. Two important aspects of this agreement were to ensure all participants' names would be kept confidential and allowing for the data collection to be completed following the HIPPA and FERPA regulations.

Another important aspect of retrieving the data was the instrument the residential treatment sites utilized during the admission and discharge process. The Aggression



Questionnaire (AQ) was administered within a 24-hour period of the intake process and within a two week period of the discharge process. The self-rated assessment was provided to the participant by the mental health therapist that has been involved with the participant's case throughout his or her residential treatment. As part of utilizing the overall outcome data in the study, I gained approval to use the AQ in my study. The AQ is manufactured through Western Psychological Services (WPS); I accessed the information on the bottom of the questionnaire and contacted the corporation to receive permission to reprint two out of the thirty-four questions from the aggression questionnaire. This provided an example of one anger scale item and one physical aggression scale item for the reader to understand the question format on the AQ. The corporation provided a format of how to gain permission to reprint selected questions; I then devised a letter asking permission to reprint questions number seven and twelve from the AQ and submitted via email. WPS organization then provided a document granting permission and this can be found in (appendix A-2).

### **Instrumentation**

The Aggression Questionnaire (AQ) (Buss & Warren, 2000). This is a 34-item self-report instrument for assessing anger and aggression. The questions are related to five types of aggression: physical, verbal, anger, hostility, and indirect, which can be rated on a Likert-type intensity scale ranging from 1 to 5, with 1 indicating "Not at all like me" to 5, indicating "Completely like me". Two questions endorsing aggression and anger include, "I get into fights more than most people", or "At times I get very angry for no good reason". The total AQ score provides a summary measure of the overall level of anger

and aggression conveyed by the respondent (Buss & Warren, 2000). A very high score indicated as  $\geq 70T$ , which is a total AQ raw score of 139-141, whereas, a very low  $\leq 29T$ , which is a total AQ raw score of  $\leq 39$ . A low overall to medium score of  $50T$  falls in the average range and suggests that the adolescent does not experience an unusual amount of anger (Buss & Warren, 2000). Buss and Warren (2000) described the internal consistency coefficients among the individual scales .70 level with reliability estimates that ranged from  $r = .71$  to  $r = .94$ , and construct validity ranged from .37 to .74 with similar results in previous studies. To obtain a score difference between pretest and posttest AQ scores, I subtracted the posttest outcome score from the pretest AQ score. For example a participant who scored an overall pretest score of 40-36 on posttest equals a score difference of 4, thus indicated that the participant showed a positive improvement.

### **Instrument Reliability and Validity**

The AQ was normed from a diverse population located throughout the United States of America. Subsequently, utilizing a sample size of 2, 138 participants, consisted of 880 males, and 1,252 females with an age range of 9 to 88 years of age (Buss & Warren, 2000, p. 2). Buss and Warren (2000) elaborated that separate norms were provided for males and females in the physical aggression, verbal aggression, and total score scales, as well as three sets of norms for youth (ages 9-18), young adults (ages 19-39), and older adults (ages 40 and above) (p.3). As mentioned in the previous paragraph the construct validity revealed a low to moderate range, which were evidenced by correlating the AQ scores with other related measures such as the Novaco Anger Scale

(NAS), Provocation Inventory (PI), Children's Inventory of Anger (ChIA) , and the Attitudes Toward Guns and Violence Questionnaire (AGVQ). Buss and Warren (2000) explained that the AGVQ scores revealed a correlation coefficient of .38 and the ChIA revealed a correlation coefficient score of .37. Whereas, the NAS and the PI were found to have correlation coefficients with the AQ of .74 and .59 (Buss & Warren, 2000).

Another study examined the aggression questionnaire (AQ) through exploratory and confirmatory models to assess aggression among 371 adolescents with an age range 12 to 19 years-old, specifically to test for internal consistency and gender invariances (Reyna, Lello, Sanchez, & Brussino, 2011). The Cronbach's alpha ( $\alpha$ ) was utilized to evaluate the internal consistency and the revealed good reliability estimates that ranged from ( $r = .70$ ) and ( $r = .80$ ), which seem consistent with Buss and Warren results. Reyna et al. (2011) indicated that the gender invariances were measured through a confirmatory factor analysis and was found to be a good fit for gender differences.

Research has utilized the aggression questionnaire to find interrelations between aggression and parent rearing factors (Ruchkin, Eisemann, & Hagglof, 1998). Ruchkin et al., (1998) found patterns of feeling rejected in rearing and aggression scores had specific correlation increased hostility and anger. Gerevich et al. (2007) indicated that the reliability and construct validity were investigated through The Cronbach alpha coefficient, which revealed high internal consistency for physical aggression ( $r = 0.82$ ) and hostility ( $r = 0.75$ ) while, moderate reliabilities were revealed for verbal aggression ( $r = 0.68$ ) and anger ( $r = 0.70$ ). The external validation indicated strong association between genders with physical aggression and male gender (Cohen's  $d = 0.60$ ) and female

verbal aggression indicated a weak association (Cohen's  $d = 0.22$ ) (Gerevich et al., 2007).

In the current research study, the researcher believed that the AQ was sufficient for the population being investigated as the AQ is not gender biased (Gerevich et al., 2007) and has been used with adults, the general population, college age students (Reyna et al., 2011), juvenile delinquents (Ireland & Archer, 2004), and other troubled youths in residential placement (Morren & Meesters, 2002) and detention centers (Ruchkin et al., 1998). The AQ is a multipurpose instrument that can be completed in a 15 to 30 minute time span depending on any questions that need clarified throughout the process (Gerevich et al. 2007; Ireland & Archer, 2004). This makes the instrument more viable given the attention span of some adolescents as compared to others. The AQ was an instrument that the residential facilities in my study use for to obtain pretest base-line self-report measurement and posttest treatment measurement. Therefore, this made it a viable option to use for my research study.

### **Validity**

The validity of this research study was important as it allowed for others to view the outcome aggression replacement training results as a viable treatment modality for troubled adolescents within residential care as a positive or negative influence. Thus, providing a guideline to make changes as needed that will empower the adolescent to function well in his or her aftercare treatment. Whiston (2005) explained that validity is the extent to what the instrument measures, specifically, what it purports to measure such as level of aggression or anger being measured in the aggression questionnaire.

Frankfort-Nachmias and Nachmias (2008) described validity as taking place due to the researcher providing support that the measurement instrument did in fact measure the variable it was to be measuring.

### **Content Validity**

Content validity has been described as a rationale of the extent in which the data indicates that the objects, questions, or tasks sufficiently represent the anticipated behavior (Whiston, 2005). Frankfort-Nachmias and Nachmias (2008) described content validity as a means in which the measurement instrument covers all the components of the theory that the researcher is attempting to measure. Two common types of content validity are face validity and sampling validity. Face validity is considered a subjective evaluation, due to the researcher instrumentation selection for measuring the content. Whereas, sampling validity is concerned with the population selection, by viewing the degree to which the statements, questions, or indicators represent that the instrument adequately corresponds to the qualities being measured (Frankfort-Nachmias & Nachmias, 2008).

One way to ensure the face validity in this research plan was to consult specialists in the field of adolescent aggression patterns and adolescent skill attainment (Frankfort-Nachmias & Nachmias, 2008). Whereas one way of ensuring sampling validity was to make sure the researcher and research team are familiar with all the items describing the content population (Frankfort-Nachmias & Nachmias, 2008). One way that I assured the research study is valid, was to understand the instrument the facility utilizes and overall

score meanings. Another way assured validity was to obtain records that provided a basic understanding of the residential care and the adolescent's response to treatment.

### **Operationalization and Definitions**

*Age:* biological and psychological changes that a person must adapt too, from the time of birth over his or her life span (Broderick & Blewitt, 2010). For the purpose of my study, age was operationally defined as age listed in the demographic intake sheet that provides a space for the adolescent to self-report age and date-of-birth during the residential program intake interview.

*Aggressive behavior:* A form of violent, unpredictable, impulsive, or reactive behavior designed to harm or injure another individual, property, or self (Schaffer & Kipp, 2007). For the purpose of my study, aggressive behavior was measured via pretest and posttest self-report on the aggression questionnaire during the intake and discharge processing.

*Education:* is the transmission of knowledge by either formal or informal means that play an important role in successful development of prosocial skills, academic achievement, and higher levels of self-esteem through positive interactions (Gaskins & Mastropieri, 2010). For the purpose of my study, education was operationally defined as the educational level listed in the demographic intake sheet that provides a space for the adolescent to self-report education level during the residential program intake interview.

*Ethnicity:* cultural traditions, beliefs, attitudes, and values handed down through generations to individuals (Broderick & Blewitt, 2010). For the purpose of my study, ethnicity was operationally defined as the ethnicity self-reported on the demographic

intake sheet that provides a space for the adolescent to self-report ethnicity by check a box labeled Caucasian, Latino, and so on... during the residential program intake interview.

*Facilitators' Aggression Replacement Training rated participation level:* The ART group facilitators are trained by certified ART instructors during their two weeks of employee orientation training and are required to take refresher courses once a year by the residential employment guidelines. The group facilitators utilize a three-point rating scale to rate the group participants with scores ranging from poor/resistant, which was indicated as a score of one, to moderate/inattentive, which was indicated as a score of two, and excellent/attentive, which was indicated as a score of three. Ratings were scored at the end of group sessions to assure that the trained ART facilitators have observed the adolescents' levels of participation. These rated levels of participation were documented on an individual's point cards, group case notes, and in daily activity progress logs.

*Family socioeconomic status:* socioeconomic status has been defined as a group of individuals that have the same social standing or power that are defined by the characteristics such as educational background, income, and occupational type of the parent/parents' in the same household (Broderick & Blewitt, 2010). For the purpose of my study, family socioeconomic status was operationally defined as the family socioeconomic status self-reported on the demographic intake sheet that provides a space for the parent/caregiver to self-report income, work-related status, and educational background residential program intake interview.

*Gender:* male or female sexual identity and one's ability to understand its meaning (Broderick & Blewitt, 2010). For the purpose of my study, gender was operationally defined as gender identity listed in the demographic intake sheet that provides a space for the adolescent to self-report male or female during the residential program intake interview.

*Levels of participation:* three levels of participation during ART group therapy have been identified and defined as attentive, inattentive, and resistant. For the purposes of my study, treatment expectations that were identified for the attentive group included: the adolescent attends all groups, completes assigned homework, participates in discussions, volunteers to help other peers, and participates in role-play activities. Treatment expectations that have been identified for the inattentive group include: adolescent attends groups, but only participates when prompted, and refuses to engage in role-play activities. Treatment expectations that have been identified for the resistant group include: adolescent attends group, but disrupts peers, and refuses to follow group rules (Sharf, 2012).

*Parental involvement:* Aspects of family-driven behavior consist of the parents as the primary decision makers in the adolescent treatment, as well engaged in family therapy thus creating a sense of empowerment among the parent-adolescent relationship (Brown, Barrett, & Ireys, 2010). For the purpose of my study, parent involvement was operationally defined as parental involvement as listed in the discharge summary report when the adolescent has completed his or her treatment goals. Subsequently, participant involvement was coded as 1 = yes and 2 = no in the SPSS analysis process.



### **Data Analysis of Plan**

This research plan utilized a causal-comparative approach for pre-existing data, which explored the predicting factors among adolescents' group therapy overall outcome results (Schenker & Rumrill, 2004). A Statistical Package for the Social Sciences (SPSS) windows 2011 version was utilized to run a statistical analysis of variance (ANOVA) and a multiple regression (Frankfort-Nachmias & Nachmias, 2008). The ANOVA analysis conveyed whether three or more means are the same, so it tested the null hypothesis that all group means significant difference between levels of group participation (attentive, inattentive, and resistant) in Aggression Replacement Training (ART) (Field, 2009). The second SPSS analysis was a multiple regression, which was a way to predict outcome variables from several variables such as age, gender, family socioeconomic status, parental involvement, ethnicity, education, and level of group participation being observed in my study (Field, 2009).

The data cleaning and screening procedures are an important part of maintaining reliability and validity outcome measures for the study (Salkind, 2010). Salkind (2010) elaborated that data preparation is part of the data cleaning process and helps to set the methods of data collection. In my study, I accessed archival case records, but had set guidelines that will need to be met during the process of data collection. For example one prerequisite was the participants needed to be in the residential program at least three months. This was important given that the aggression replacement training group is a 12-week treatment modality and doing so allowed the adolescent to have participated in one full sequence of treatment.

Another feature of screening procedures was being aware of experimenter biases such as favoring male group treatment outcome responses over female outcome responses. Salkind (2010) indicated that social interaction biases occur when experimenter responds differently to one gender than another. For example, I am a mental health therapist and tend to work with both males and females, but tend to favor working with male clients because I believe that males are less dramatic than adolescent girls. So, I was aware of the differences in how males and females respond to group treatment and remain nonjudgmental when retrieving and documenting outcome data

The data cleaning process was ongoing throughout the process of the research design, thus laying the pathway for clean and valid outcome data. Salkind (2010) pointed out assessment instrument in the study should possess sufficient reliability and/or validity for the population in the study, as well as appear prominently in the literature. For example, the aggression questionnaire has been utilized in different research studies and has been utilized within residential program during the intake and discharge process. Obtaining the appropriate information during the data collection process helped prevent costly data cleaning at the end of the study (Salkind, 2010).

Missing data and errors in entering information were monitored throughout the data entry process, as this helped to maintain extreme outliers from occurring (Salkind, 2010). For example during the data entry process, I knew that my study would require a sample size of 160 participants, if I only entered 155 participants this may have reduced the power of the study and skew the outcome data. Another, consideration that was important was having a large enough sample to prevent Type I and Type II errors.

Salkind (2010) explained solutions and approaches during data processing can be prevented by taking steps and following the protocols outlined in the research design.

Aspects of the specific analytical steps taken in conducting an analyses of variance and multiple regression analyses are based on linear models (Green & Salkind, 2011). My study utilized unordered sets to help predict the types of relationship that may have an effect on the adolescent's overall outcome (AQ) aggression results. The research question and hypotheses for my study were:

RQ1: Among adolescents in residential treatment, is there a significant difference between level of group participation (attentive, inattentive, and resistant) in ART and successful outcomes (i.e., decreased erratic aggressive behaviors and increased anger control), as measured by the overall posttest AQ score difference?

$H_01$ : There is no significant difference between level of group participation (attentive, inattentive, and resistant) in ART that can affect successful outcomes of decreased erratic aggressive behaviors and increased anger control as measured by the overall posttest AQ score difference among adolescents in residential treatment.

$H_a1$ : Among adolescents in residential treatment, there is a significant difference between levels of group participation (attentive, inattentive, and resistant) in ART and successful outcomes (i.e., decreased erratic aggressive behaviors and increased anger control), as measured by the overall posttest AQ score difference.

RQ2: Do the variables age, parental involvement, gender, family socioeconomic status, ethnicity, education, and level of group participation (attentive, inattentive, and

resistant) predict a reduction in risk assessment, as measured by the AQ (Buss & Warren, 2000)?

*H<sub>02</sub>*: Age, parental involvement gender, family socioeconomic status, ethnicity, education, and level of group participation (attentive, inattentive, and resistant) do not predict a reduction in risk assessment for participants.

*H<sub>a2</sub>*: Age, parental involvement gender, family socioeconomic status, ethnicity, education, and level of group participation (attentive, inattentive, and resistant) predict a reduction in risk assessment for participants.

RQ3: Do age and parental involvement predict reduction in risk assessment over and above the variables of gender, family socioeconomic status, ethnicity, education, and level of group participation (attentive, inattentive, and resistant)?

*H<sub>03</sub>*: Age and parental involvement do not predict reduction in risk assessment over and above the variables of gender, family socioeconomic status, ethnicity, education, and level of group participation (attentive, inattentive, and resistant).

*H<sub>a3</sub>*: Age and parental involvement do predict reduction in risk assessment over and above the variables of gender, family socioeconomic status, ethnicity, education, and level of group participation (attentive, inattentive, and resistant).

RQ4: Do the variables of age, parental involvement, gender, family socioeconomic status, ethnicity, and education predict attentive participation level in ART?

*H<sub>04</sub>*: Age, parental involvement, gender, family socioeconomic status, ethnicity, and education do not predict attentive participation level in ART.

$H_{a4}$ : Age, parental involvement, gender, family socioeconomic status, ethnicity, and education predict attentive participation level in ART.

RQ5: Do age, gender, and education predict attentive participation level over and above the variables of family socioeconomic status, parental involvement, and ethnicity?

$H_{05}$ : Age, gender, and education do not predict attentive participation level over and above the variables of family socioeconomic status, parental involvement, and ethnicity.

$H_{a5}$ : Age, gender, and education do predict attentive participation level over and above the variables of family socioeconomic status, parental involvement, and ethnicity.

The first part of the analysis for the causal-comparative study research question one was an ANOVA, which is an omnibus test that looks for an overall experimental effect, but does not tell us specific information about which groups were affected by the experimental manipulation (Field, 2009). Field (2009) explained that the ANOVA produces an *F*-Statistic, which compares the amount of systematic variance to the unsystematic variance. As a result, articulates that the all three sample are not equal, assuming that the experiment was conducted with three different groups (Field, 2009). Field, indicated that there are other ways that the mean can differ, the first is the three sample means are significantly different, another is the means in two groups are the same, while the third group has a significant different mean. Thus, further elaborating that in the experiment, the *F*-ratio conveys the experimental manipulation has had some effect, but does specifically tell us what the effect was.

Assumptions of an ANOVA were (a) variances in each experimental condition need to be fairly alike, observations should be independent and the dependent variable should be measured on an interval scale. If the group sizes are not equal the accuracy of the  $F$  is skewed and non-normality will affect  $F$  in unpredictable ways, (b) homogeneity of variance, when variances are proportional to the mean the  $F$ -ratio tends to be conservative, thus producing a non-significant results of Type 1 error rate not being controlled, (c) violations of assumptions to the independence has been indicated as very serious, thus causing Type 1 error rates to be inflated (Field, 2009). Field (2009) elaborated that Type 1 errors can be controlled utilizing the Bonferroni post hoc test, when running the one-way ANOVA on SPSS. The SPSS program provided several options to set up the parameters of the ANOVA analysis, to help alleviate any outliers that may confound the study. One of the major confounds would be the researcher not setting up the statistical test appropriately, thus indicating that I will have to know which parameters to use prior to collecting the data.

The second analysis was a multiple regression, which helped delineate which factors in research questions two and three that may predict reduction in risk assessment and research question four and five that may have predictors for attentive participation level. Field (2009) explained that each predictor variable has its own coefficient, which is combined with all the variables and multiplied by their respective coefficient along with a residual term to predict the outcome variable. Basically, researchers seek to find a linear combination of predictors' that correlate with the outcome variable, thus creating a Multiple  $R$  correlation between observed values of  $Y$  and the values of  $Y$  predicted (Field,

2009). Subsequently, Field indicated that large values of the multiple  $R$  represent a huge correlation between the predicted and observed values of the outcome; a multiple  $R$  of 1 represents a model that predicts the observed data.

Assumption of a multiple regression were (a) the dependent variable is normally distributed in the population for each independent variable, (b) predictor variables must be categorical, (c) scores on variables are independent of other scores on the same variables, (d) there should be no perfect linear relationship between two or more predictors, (e) homoscedasticity the variance of residual terms should be constant (Field, 2009). Field (2009) elaborated that with independent errors a Durbin-Watson test can be utilized to test for serial correlation between errors. Results of the multiple regression can be intrepid utilizing the descriptives option in the SPSS program. This is a table that will provide the mean and standard deviation of each variable in the data set (Field, 2009).

### **Threats to Validity**

Threats to validity have been described as internal, external, and statistical conclusion (Creswell, 2009). Creswell (2009) defined the internal threat to validity may be a result of experiment procedures, treatments, or experiences of the participant. One internal threat to validity in this casual-comparative study was history, given that the participant experienced the treatment modality prior to the study. Thus, all the events the client experienced during his or her placement in the residential treatment facility may have influenced change, not the treatment itself. Another internal threat of my study was how the testing occurred during the treatment process, for example the duress or of the client thus cannot be measured in an after the fact research study.

External validity threats arise when experimenters draw incorrect inferences from sample data such as characteristics of others select for study, setting, and timing of experiment (Creswell, 2009). An example of a threat to external validity in my study was the accuracy of affiliated treatment records retrieved from another facility and have not been indicated as being utilized as a part of the pretreatment determination. Another example would be interaction of history and treatment, given that the study was after the fact, the researcher cannot generalize the result to past treatment experiences. Therefore, the results of my study were interpreted with caution due to the nature of this threat, through keeping an open mind and recognizing any unwarranted biases during the data retrieval process.

### **Ethical Concerns**

One ethical concern of this research plan was ensuring appropriate consent and assent for the adolescent to participate in my study. The American Counseling Association (2014) section G, code G.2.e. indicated that when persons who are unable to give informed consent, counselors need to provide appropriate explanation to individual who is the legal guardian and retrieve their written permission. To assure ethical protection of the participants, all identifying information such as name, address, phone number, and social security numbers were removed. Once the identifying information was removed, I coded the data through a combination of numbers and letters on to a spreadsheet format that was used for data analysis. Another ethical consideration and requirement is when working with participants under the age of 18 years old, appropriate forms should be sent to the Institutional Review Board (IRB) for approval, with a specific



detailed outline of the research study. The American Counseling Association (2014) section G, code G.1.e. indicated that researchers with human participants are responsible for their welfare throughout the process of the study. The facility executive director provided his consent to retrieve all de-identified information needed for my study (see Appendix A). Another very important part of completing my dissertation study was to follow the IRB review board expectations set the university, Section G, code G.1.a. indicated that counselors plan, design, conduct, and report research in a manner consistent with relevant to ethical principles, host institutional regulations (ACA, 2014).

### **Summary**

This chapter presented a discussion of the research methods and procedures that were used in the study. A casual-comparative pre-posttest (ex-post facto) research design was utilized to explore factors that might be predictive in determining participation level in Aggression Replacement Training (ART) and in turn if attentive participation in ART can lead to increased anger control and reduced aggressive behaviors in adolescents within a residential treatment facility. The independent variables were the levels of participation and predictor variables such as parental involvement, education, social economic status, age, gender, ethnicity and the dependent variables will be aggression and anger control. The sample size for my study consisted of 160 adolescents retrieved from after the fact treatment records stored in a secured site at Perseus House Inc. located in Erie, Pa. During the data collection process, I removed all identifying information such as name and social security number to ensure the confidentiality of the participants in the study, as well the consent provided by the executive director to retrieve the data to

complete my study. Lastly, the analysis of variance (ANOVA) and multiple regression were conducted using the SPSS software package to help delineate any significant differences and predicting factors. Furthermore, data collection, analysis procedures, and results will be discussed more thoroughly in Chapter 4.

## Chapter 4: Results

### **Introduction**

The purpose of this quantitative study was to examine whether the adolescents demographic variables (age, gender, family socioeconomic status, parental involvement, ethnicity, and education), and level of group participation in ART predict increased anger control and reduction of aggression among adolescents living within residential treatment facilities as indicated by archival Aggression Questionnaire (AQ) overall outcome data. The AQ is a self-rated assessment questionnaire that is administered to adolescents at the intake and exit interviews with their mental health therapist. My research questions were designed to filter out the differences in group participation levels (i.e. attentive, inattentive, and resistant) and the predicting factors that attribute to decreased erratic aggressive behaviors and increased anger control as measured by overall AQ score differences. Moreover, whether or not the specific independent variables predict participants reduction in assessment risk and attentive participation level in ART over and above the remaining factors.

### **Data Collection**

After I received approval from the Walden University Institutional Review Board (Approval #08-14-15-0295662), I contacted my research site and began to collect archival data. The time frame for the data collection process was 5 days. During the first day, I collaborated with the study site's director of administrative operations who allowed me to review participants' discharge documents in a quiet meeting room. On that day, I also began sorting through potential participants' data, thus setting aside clients records

that did not meet my studies 90 day criteria or did not have post overall questionnaire scores due to incompleteness of residential treatment. Once I determined that a prospective participant met the study guidelines, I retrieved his or her de-identified information and entered data on a Microsoft Excel spreadsheet. On the second day, I continued my data retrieval in the manner noted above. I was able to complete my de-identified data collection in 4 days. On the fifth day, I created my electronic worksheet to begin SPSS analysis.

I had originally intended to gather data for a two-year time frame. However, discharge records from two of the five residential sites that I studied lacked adolescent discharge completion. I subsequently decided to extend my time frame to 3 years and collect data for the period 2011-2014. Moreover, a longer study period was actually helpful, given that some of the adolescents placed through affiliated agencies such as Children and Family Services or the juvenile justice system have set criteria to meet before they can be discharged. This in turn provided an opportunity for these adolescents to attend scheduled ART groups, thus enhancing their likelihood of increased anger control and decreased aggression.

Using these discharge records, I was able to identify the original sample size of 160, which consisted of 32 participants from five residential facilities in Pennsylvania. I analyzed data for 64 males and 96 females who ranged in age from 11-19 years-old. The mean age of participants was 15 years. Sixty-eight percent ( $n = 110$ ) were Caucasian, 22% ( $n = 35$ ) were African American, 5% ( $n = 8$ ) were Hispanic, 4% ( $n = 6$ ) were Biracial, and 1% ( $n = 1$ ) were Other. Participants attended between 36-144 ART groups,

focusing on such topics as anger control, moral reasoning, and skill streaming, while in residential treatment programs during the study period; the mean number of group sessions attended was 65. The selected population completed one of five residential programs that are known to offer Aggression Replacement Training as part of group treatment.

Complications in utilizing small sample sizes may arise during a study. External validity may suffer when investigating a small population that is different from a larger population (Frankfort-Nachmias & Nachmias, 2008). Frankfort-Nachmias and Nachmias (2008) explained that the range of generalizability of research findings should be universal to a larger population. The generalizability of the current causal-comparative study is limited to the population that I am investigating, thus indicating that external validity reflects the characteristics of the population being studied. This in turn cannot assume that the selected group is representative to a larger population as a whole, however may be generalized to other residential treatment populations within Pennsylvania (Frankfort-Nachmias & Nachmias, 2008).

## **Results**

In this section, I discuss the results from the data analysis that I ran utilizing the information retrieved from the samples archival records. An important part of any study is to provide an overview steps completed to answer each research question through analysis selection. Lastly, I provide a summary of the results from each analysis ran.

### One-Way ANOVA

I performed a one-way ANOVA test in order to address the first research question. I strove to examine whether there was a significant difference between levels of group participation and, if so, whether they resulted in decreased erratic aggressive behaviors and increased anger control among adolescents, as measured by differences in AQ pre and posttest scores. As illustrated in Table 1, participants are classified into three levels of group participation in ART: attentive ( $n = 64$ ), inattentive ( $n = 69$ ), and resistant ( $n = 27$ ).

Table 1

#### *Descriptive Statistics*

Participation level	<i>N</i>	<i>M</i>	<i>SD</i>	<i>SE</i>	95% <i>CI for M</i>	
					<i>LL</i>	<i>UL</i>
Attentive	64	11.23	7.66	.957	9.32	13.15
Inattentive	69	8.41	8.04	.968	6.47	10.34
Resistant	27	-2.37	9.12	1.755	-5.98	1.23
Total	160	7.72	9.33	.737	6.26	9.17

Note. *CI* = confidence interval; *LL* = lower limit, *UL* = upper limit.

The descriptive statistics shows a total mean for attentive participation group ( $M = 11.23$ ,  $SD = 7.66$ ), inattentive participation group ( $M = 8.41$ ,  $SD = 8.04$ ), and resistant participation group ( $M = -2.37$ ,  $SD = 9.12$ ) and, therefore, shows that the group levels were distributed unevenly. Given that the group participation levels were uneven, a Harmonic Mean Sample Size analysis (Field, 2009) was conducted (see Table 2). Field (2009) explained that a harmonic sample size is a weighted version of the mean that

accounts for the relationship between variance and mean, thus reducing bias that might be present with unequal sample sizes.

Table 2

*Tukey HSD<sup>a,b</sup> Homogenous Subsets*

ART group participation level	N	Subset for alpha = 0.01	
		1	2
Attentive participation	64		11.23
Inattentive participation	69		8.41
Resistant participation	27	-2.37	

<sup>a</sup>The Harmonic Mean Sample Size was used;  $n = 44.673$ .

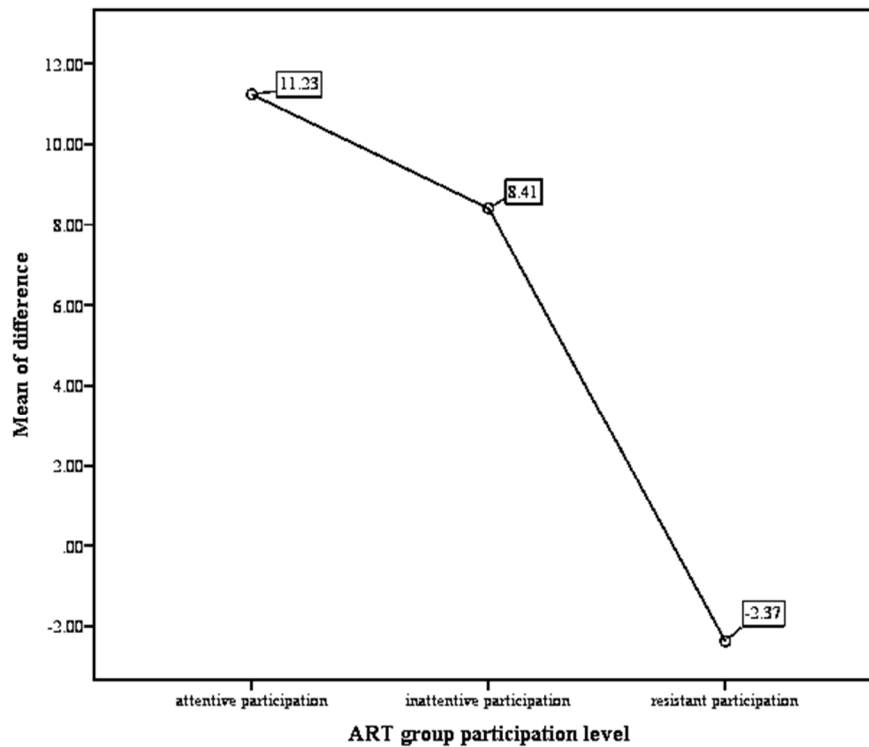
<sup>b</sup>The group sizes are unequal. Therefore, Type 1 error levels are not guaranteed.

Table 3

*Test of Homogeneity of Variance*

Levene Statistic	df1	df2	Sig.
.044	2	157	.957

A test of homogeneity of variance was measured by Levene's statistic test, as illustrated in Table 3. Field (2009) indicated a Levene's test is calculated to determine whether or not the variances of the groups in an ANOVA are the same. The Levenes' test  $F(2,157)$ ,  $p > 0.05$  showed that the variances of the three groups were not significantly different. Field (2009) indicated that non-significant results are suggestive that the ANOVA assumptions are being met. Specifically, this finding illustrates that the dependent variable is normally distributed among the population (Field, 2009).



*Figure 1.* Means plots

Figure 1 illustrates that there were no outliers, as assessed by the means plots. Field (2009) indicated that the means plot can be used as a visual aide to see if the mean varies between different groups of data. It is important to ensure that there are no outliers, as outliers can cause skewness among the variables, thus indicating that the factors were not normally distributed. One of the assumptions within the study is that the variances in each experimental condition need to be fairly alike, observations should be independent and the dependent variable should be measured on an interval scale. If the group sizes are not equal, then the accuracy of the  $F$  is skewed and non-normality will affect  $F$  in unpredictable ways (Field, 2009).



Table 4

*One-way Analysis of Variance of Post Aggression Questionnaire Difference*

	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	<i>Sig.</i>
Between Groups (combined)	3571.92	2	1785.96	27.34	.000
Within Groups	10254.42	157	65.32		
Total	13826.34	159			

Note. *SS* = sum of squares; *MS* = mean square.

The one-way analysis of variance as shown in Table 4 provides an overview of between-group effects and within-group effects. Field (2009) explained that the between-group effects are effects due to the model/the experimental effects and the within-group effects are the unsystematic variation in the data. Field described the within-groups effects as a variation due to natural individual differences within the participation groups (p.383). The ANOVA results revealed that there were significant differences between levels of group participation (attentive, inattentive, and resistant) in Aggression Replacement Training (ART) that can affect successful outcomes of decreased erratic aggressive behaviors and increased anger control as measured by the overall posttest aggression questionnaire (AQ) scores difference among adolescents in residential treatment  $F(2, 157) = 27.34, p < 0.05$ .

**Post Hoc Analysis**

To further investigate the differences between the ART group participation levels a Bonferroni, Games-Howell, and Tukey HSD post hoc tests were completed (see Table 5). Field (2009) indicated that a post hoc analysis can be used to compare all the groups with each other to help break down differences in pairwise group comparisons. In my study, a Bonferroni correction analysis was used, as it provides safeguards for the

combined comparison that could cause a Type 1 error, which should stay below .05 (Field, 2009). The pairwise comparisons revealed no significant difference between the attentive and inattentive groups ( $M = 2.83$ ,  $SD = 1.40$ ),  $p = .136$ . However, there were significant differences found between the attentive and resistant groups ( $M = 13.60$ ,  $SD = 1.85$ ),  $p < 0.05$ , as well as between the inattentive and resistant groups ( $M = 10.78$ ,  $SD = 1.83$ ),  $p < 0.05$ .

Table 5

*Post Hoc Multiple Comparisons*

	(I) ART group participation level	(J) ART group participation level	MD (I- J)	SE	Sig.
Bonferroni	Attentive	Inattentive	2.83	1.40	.136
		Resistant	13.60*	1.85	.000*
	Inattentive	Attentive	-2.83	1.40	.136
		Resistant	10.78*	1.83	.000*
	Resistant	Attentive	-13.60*	1.85	.000*
		Inattentive	-10.78*	1.83	.000*

Note: \* $p < 0.05$

The null hypothesis of the first research question postulated that there were no significant differences between levels of group participation (attentive, inattentive, and resistant) in Aggression Replacement Training (ART) that can affect successful outcomes of decreased erratic aggressive behaviors and increased anger control as measured by the overall posttest aggression questionnaire(AQ) scores difference among adolescents in residential treatment. Therefore, since the post hoc analysis showed that there were significant differences found between two out of the three group combinations and ANOVA outcomes,  $F(2,157) = 27.34$ ,  $p < 0.05$ , the null hypothesis ( $H_01$ ) was rejected

and the alternative hypothesis ( $H_{a1}$ ) that there would be a difference between levels of group participation (attentive, inattentive, and resistant) in Aggression Replacement Training (ART) was accepted.

### **Multiple Regressions**

In order to address the second and third research questions, a linear multiple regression was conducted to determine if the variables of age and parental involvement could predict a reduction in risk assessment over and above the variables of gender, family socioeconomic status, ethnicity, education, and level of group participation. Field (2009) elaborated that a multiple regression predicts outcome variables from other variables, thus taking the correlation of the variables a step further. An overview of the descriptive statistics, skewness, and kurtosis for the factors of age, gender, parent involvement, education level, family socioeconomic status, ethnicity, and ART group participation level (see Table 6). Field (2009) indicated that values of skewness and kurtosis should be close to zero in a normal distribution (p. 138). For example, a highly skewed distribution range is  $< -3$  or  $> +3$ , a moderately skewed distribution range is between  $-1$  and  $-0.5$  or  $0.5$  and  $1$ , as well as a distribution between  $-0.5$  and  $0.5$  is approximately symmetric (Field, 2009). Field (2009) elaborated that data scores assembled on the right are considered positive, whereas those scores piled on the left are negative. Positive values of kurtosis form a pointy and heavy tailed distribution, whereas the negative values take-on a flat and light-tailed distribution (Field, 2009).

Table 6

*Descriptive Statistics*

	<i>M</i>	<i>SD</i>	<i>N</i>	Skewness		Kurtosis	
				Statistic	<i>SE</i>	Statistic	<i>SE</i>
Age	15.14	1.588	160	-.038	.192	-.581	.381
Gender	1.40	.491	160	.412	.192	-1.853	.381
Parent Involvement	1.09	.283	160	2.947	.192	6.771	.381
Education Level	9.24	1.557	160	-.302	.192	-.271	.381
Family Socioeconomic Status	3.57	1.821	160	.034	.192	-1.329	.381
Ethnicity	3.92	1.686	160	-1.027	.192	-.823	.381
ART group Participation Level	1.77	.720	160	.378	.192	-1.002	.381

The descriptive statistics provided the total means for age ( $M = 15.14$ ,  $SD = 1.59$ ), gender ( $M = 1.40$ ,  $SD = .491$ ), parent involvement ( $M = 1.09$ ,  $SD = .283$ ), education level ( $M = 9.24$ ,  $SD = 1.56$ ), family socioeconomic status ( $M = 3.57$ ,  $SD = 1.82$ ), and ethnicity ( $M = 3.92$ ,  $SD = 1.69$ ), respectively. The skewness of the variables age, gender, education level, ART group participation level, parent involvement, ethnicity, and family socioeconomic status fall into an acceptable skewness range (-3 and +3) (Field, 2009). The positive peaks of the kurtosis include parent involvement and ethnicity, whereas variables gender, family socioeconomic status, age, ART group participation level, and education level are negative, therefore a light right tailed distribution formed ( $M = -4.60$ ,  $SD = 0.98$ ).

Table 7

*Model Summary*

Model	<i>R</i>	<i>R</i> <sup>2</sup>	Adjusted <i>R</i> <sup>2</sup>	<i>SE</i> of the Estimates	<i>R</i> <sup>2</sup> Change	<i>F</i> Change	<i>df</i> 1	<i>df</i> 2	<i>Sig. F</i> Change
1	.547	.299	.267	7.98	.299	9.277	7	152	.000

<sup>a</sup>Predictors: (Constant), ART group participation level, parent involvement, age, gender, education level, ethnicity, family socio-economic status,

<sup>b</sup>Dependent: post overall aggression questionnaire score difference

The model summary was used to provide a simple correlation ( $r = .547, p < 0.05$ ) between the predictor variables and dependent variable post overall aggression questionnaire difference (Field, 2009). The *R* value is .547, thus indicating that there is a predictability between the combined variables and the overall posttest aggression questionnaire score difference (see Model 7). The value of the *R*<sup>2</sup> is 29.9%, which indicated that all the factors together do predict a reduction in risk assessment. A Pearson Correlation that was used to further assess the relationship between every pair of variables. Field (2009) indicated that measures the strength of relationship between two variables, taking any value from -1 to +1. A negative value has been described as one variable changes, the other changes in the opposite direction, whereas a positive value has been described as one variable changes, the other changes in the same direction, and a value of zero was described as one variable changes the other doesn't (Field, 2009).

Table 8 shows three statistically significant ( $p < 0.05$ ) correlations among the variables, and the first was between ART group participation level and post overall aggression score difference ( $r = .466, p = .000$ ), which indicated that there was a positive medium correlation among the two variables. The second statistically significant finding

was gender and post overall aggression score difference ( $r = -.221, p = 0.002$ ), which indicated a small negative correlation among the two variables. The third significant finding was parent involvement and post overall aggression score difference ( $r = -.191, p = .008$ ), which indicated small negative correlation among the two variables. The variables of age ( $r = -.035, p = .330$ ) was not significant ( $p > 0.05$ ), thus indicating that one of the two variables age and parent involvement did predict a reduction in risk assessment over and above the variables of gender, family socioeconomic status, ethnicity, education, and level of group participation.

Table 8

*Pearson Correlations*

	Post overall AQ score Differences	age	gender	parent involvement	education level	family SES	ethnicity	ART group level
Post Overall (AQ) Score Difference	1.000	-.040	-.221*	-.191*	-.101	.062	-.039	-.466*
Age	-.040	1.000	-.015	.127	.869	.040	.075	.000
Gender	-.221*	-.015	1.000	-.117	-.046	.032	.069	.121
Parent	-.191*	.127	-.117	1.000	.122	-.219	-.156	.161
Education	-.101	.869	-.046	.122	1.000	.020	.056	-.045
Family SES	.062	.040	.032	-.219	.020	1.000	.154	-.019
Ethnicity	.039	.075	.093	-.156	.056	.154	1.000	-.083
ART group	.466*	.000	.121	.161	-.045	-.019	-.083	1.000
Sig. (1-tailed)								
Post Overall (AQ) Score Difference	.	.307	.002*	.008*	.101	.216	.312	.000*
Age	.307	.	.428	.055	.000	.307	.174	.498
Gender	.002*	.428	.	.070	.282	.342	.122	.064
Parent	.008*	.055	.070	.	.062	.003	.024	.021
Education	.101	.000	.282	.062	.	.403	.243	.287
Family SES	.216	.307	.342	.003	.403	.	.026	.406
Ethnicity	.312	.174	.122	.024	.243	.026	.	.149
ART group	.000*	.498	.064	.021	.287	.406	.149	.

Note: \* $p < 0.05$

Research question two asked if the variables of age, parental involvement, gender, family socioeconomic status, ethnicity, education, and level of group participation predicted a reduction in risk assessment as measured by the Aggression Questionnaire difference (Buss & Warren, 2000). The results indicated that the variables ART group participation level, gender, and parental involvement had predictability, therefore, (Ho2) was rejected and the alternative hypothesis (Ha2) was accepted. The third research question asked if the variables of age and parental involvement predicted reduction in risk assessment over and above the variables gender, family socioeconomic status, ethnicity, education, and level of group participation. The results indicated that parental involvement did predict risk reduction over and above the remaining variables; however, age did not. Therefore, the null hypothesis (Ho3) was accepted and the alternative hypothesis (Ha3) was rejected.

A second multiple regression was conducted to examine the fourth and fifth research questions, to determine whether or not the variables of age, parental involvement, gender, family socioeconomic status, ethnicity, and education predict attentive participation level in Aggression Replacement Training (ART) and if the variables of age, gender, and education predict attentive participation level over and above the variables family socioeconomic status, parental involvement, and ethnicity. Table 9 shows the descriptive statistics, skewness, and kurtosis for the second analysis.

Table 9

*Descriptive Statistics*

	<i>M</i>	<i>SD</i>	<i>N</i>	Skewness		Kurtosis	
				Statistic	<i>SE</i>	Statistic	<i>SE</i>
Age	15.14	1.588	160	-.038	.192	-.581	.381
Gender	1.40	.491	160	.412	.192	-1.853	.381
Parent Involvement	1.09	.283	160	2.947	.192	6.771	.381
Education Level	9.24	1.557	160	-.302	.192	-.271	.381
Family SES	3.57	1.821	160	.034	.192	-1.329	.381
Ethnicity	3.92	1.686	160	-1.004	.192	-.855	.381

The total descriptive statistics included mean of age ( $M = 15.14$ ,  $SD = 1.59$ ), gender ( $M = 1.40$ ,  $SD = .491$ ), parent involvement ( $M = 1.09$ ,  $SD = .283$ ), education level ( $M = 9.24$ ,  $SD = 1.56$ ), family socioeconomic status ( $M = 3.57$ ,  $SD = 1.82$ ), and ethnicity ( $M = 3.92$ ,  $SD = 1.69$ ). The skewness of the variables of age, gender, education level, parent involvement, ethnicity, and family socioeconomic status fell into an acceptable range (-3 and 3). The positive peak of the kurtosis was parent involvement, whereas variables gender, ethnicity, family socioeconomic status, age, and education level are negative, thus together form medium right tailed distribution ( $M = -4.30$ ,  $SD = 0.98$ ).

Table 10 shows a model summary that was used to provide a simple correlation ( $r = .253$ ,  $p = .113$ ) between the predictor variables and dependent variable attentive ART group participation level. The  $R$  value is .253, thus indicating that there is predictability between the combined variables and attentive ART group participation level. The value of the  $R^2$  is 6.4%, signifying that all the factors together have a small amount of



predictability to attentive participation level; therefore, indicating that there must be other variables that have an influence on participants' attentive participation level.

Table 10

*Model Summary*

Model	<i>R</i>	<i>R</i> <sup>2</sup>	Adjusted <i>R</i> <sup>2</sup>	<i>SE</i> of the estimates	<i>R</i> <sup>2</sup> change	<i>F</i> change	<i>df</i> 1	<i>df</i> 2	<i>Sig. F</i> change
1	.253	.064	.028	.710	.064	1.750	6	153	.113

<sup>a</sup>Predictors: (Constant), parent involvement, age, gender, education level, ethnicity, family socio-economic status.

<sup>b</sup>Dependent: ART group participation level

An overview of a Pearson Correlation was used to further assess the relationship between all the variables (see Table 11). The predictors with the highest correlation are ART group participation level and parent involvement ( $r = .161, p < 0.05$ ). The variables age ( $r = .000, p = .498$ ), gender ( $r = .121, p = .064$ ), and education level ( $r = -.045, p = .287$ ) are not significantly different ( $p > 0.05$ ) and therefore, do not predict attentive participation level over and above the variables of family socioeconomic status, parental involvement, and ethnicity. The fourth research question asked if the variables of age, parental involvement, gender, family socioeconomic status, ethnicity, and education predicted attentive participation level in Aggression replacement Training (ART). The results indicated that the variable parental involvement does predict attentive participation level, therefore, (Ho4) is rejected and the alternative hypothesis (Ha4) was accepted.

Table 11

*Pearson Correlations*

	ART group participation level	age	gender	education level	parent involvement	family SES	ethnicity
ART Group							
Participation	1.000	.000	.121	-.045	.161*	-.019	-.113
Age	.000	1.000	-.015	.869	.127	.040	.087
Gender	.121	-.015	1.000	.046	-.117	.032	.069
Education	-.045	.869	-.046	1.000	.122	.020	.058
Parent	.161*	.127	-.117	.122	1.000	-.219	-.148
Family SES	-.019	.040	.032	.020	-.219	1.000	.158
Ethnicity	-.083	.075	.093	-.156	-.056	.154	1.000
<i>Sig. (1-tailed)</i>							
ART group							
Participation	.	.498	.064	.287	.021*	.406	.077
Age	.498	.	.428	.000	.055	.307	.138
Gender	.064	.428	.	.282	.070	.342	.194
Education	.287	.000	.282	.	.062	.403	.235
Parent	.021*	.055	.070	.062	.	.003	.031
Family SES	.406	.307	.342	.403	.003	.	.023
Ethnicity	.149	.174	.122	.243	.024	.026	.

Note: \* $p < 0.05$

Finally, the fifth research question asked whether the variables of age, gender, and education predicted attentive participation level in Aggression Replacement Training (ART) over and above the variables of family socioeconomic status, parental involvement, and ethnicity. The results found that variables age, gender, and education do not predict attentive participation level over and above the remaining variables, therefore, the null hypothesis (Ho5) was accepted and the alternative hypothesis was rejected.

### Summary

In summary, there were five research questions explored for this casual-comparative study. The first research question sought to identify if there was a significant

difference between levels of group participation (attentive, inattentive, and resistant) in Aggression Replacement Training (ART) that can affect successful outcomes of decreased erratic aggressive behaviors and increased anger control among adolescents in residential treatment as measured by the posttest aggression questionnaire (AQ) scores difference. Since there were significant findings between levels of attentive/resistance and inattentive/ resistant of ART group participation the alternative hypothesis was accepted for research question one. Research question two examined whether the variables of age, parental involvement, gender, family socioeconomic status, ethnicity, education, and level of group participation could predict a reduction in risk assessment as measured by the Aggression Questionnaire (Buss & Warren, 2000). The research study found that the variables ART group participation level, gender, and parental involvement did predict a reduction in risk assessment; therefore the alternative hypothesis was accepted.

Research question three explored whether the variables of age and parental involvement could predict reduction in risk assessment over and above the variables of gender, family socioeconomic status, ethnicity, education, and level of group participation. The statistical analysis revealed that the factor parental involvement did predict a reduction in risk assessment over and above the other variables, while the variable of age was not significant. Therefore, the null hypothesis was accepted.

Research question four sought to identify whether the variables of age, parental involvement, gender, family socioeconomic status, ethnicity, and education could predict participant attentive participation level in ART. The results of the study found that the

variable parental involvement did predict attentive participation level; therefore the alternative hypothesis was accepted. Finally, research question five explored whether the variables of age, gender, and education could predict attentive participation level over and above the variables family socioeconomic status, parental involvement, and ethnicity. The outcome data indicated that the factors age, gender, and education did not predict attentive participation in ART over and above the remaining variables, and therefore the null hypothesis was accepted. Chapter 5 will discuss the interpretations of the findings, the limitations of the study, recommendations, and future implications.

## Chapter 5: Discussion, Conclusions, and Recommendations

### **Introduction**

The purpose of this quantitative study was to examine whether the adolescents demographic variables (age, gender, family socioeconomic status, parental involvement, ethnicity, and education), and level of group participation in ART predict increased anger control and reduction of aggression among adolescents living within residential treatment facilities as indicated by archival Aggression Questionnaire (AQ) overall outcome data. All study participants were in residential treatment for at least 3 months and had received at least one full cycle of ART group therapy. An existing dataset was used for my study, since the data has already collected and there could not be a random assignment of the participants. Therefore, the casual-comparative pre-posttest design was the most appropriate to use in the retrieval of archival data from residential facilities in Pennsylvania. This was a systematic empirical approach that did not entail experimental manipulation or random assignment of the participants, as the events already transpired (Rudestam & Newton, 2008). Data for my study was retrieved from the archival intake information such as age, gender, family socio economic status, ethnicity, and education has been collected by facility case manager and master level mental health therapists.

The results of the ANOVA suggest that there were significant differences between ART group participation levels (attentive, inattentive, and resistant) as measured by the overall posttest AQ score differences. Specifically, the attentive/resistant and inattentive/resistant participation level showed significant statistical differences among the group combinations. Moreover, the results show that group participation level can

have an effect on the successful outcome of decreased erratic aggressive behaviors and increased anger control in adolescents.

The findings of the study provide insight into adolescents' responses to ART treatment intervention. Group participation, gender, and parental involvement did predict a reduction in risk assessment; age and parental involvement did not predict any additional reduction in risk assessment over and above the remaining variables. These findings show that a combination of variables in research questions 2 and 3 together have predictability in reducing risk assessment. Parental involvement did predict attentive participation level in ART. This finding shows that parental involvement alone had predictability with adolescents' attentive participation level. The variables of age, gender, and education did not predict attentive participation level over and above the variables family socioeconomic status, parental involvement, and ethnicity. The results of my study indicated that adolescent response to treatment vary and can be linked to a combination of variables.

### **Interpretations of the Findings**

Based on my study findings, I believe that further investigation of ART, especially the factors that account for participants' varying level of group participation, is merited. The ART program offers a valuable treatment modality for adolescents with erratic behavioral problems; but, after an exhaustive literature search, I was unable to find research that clearly identifies which factors accounted for successful aggressive adolescent interventions (Amendola & Oliver, 2010; Fives et al., 2010). Yasui and Dishion (2007) explained that a large part of understanding today's adolescent comes

from the lack of being able to step outside the box and look at all the sociocultural influences. Understanding that there are differences in adolescents' perceptions and diverse beliefs systems may also attribute to the lack of effective adolescent interventions.

My findings concur with those of other researchers (Chen et al., 2011, McKinnie Burnie, 2006; Racz et al., 2011) who found predictive factors such as parental involvement, level of education, family economic status, age, gender, and ethnicity may be inter correlated with problem behaviors. Predictive factors may have an influence on different situations, either enhancing or deterring ones reaction. Researchers have not been to attribute causality of behavioral problems among adolescents to one factor (McKinnie & Burnie, 2006: Racz et al., 2011). In my study the results found certain predicting factors aided in positive treatment outcomes.

In my study, parental involvement predicted attentive participation in ART while parental involvement, attentive participation in ART, and gender predicted a reduction in the difference between pre and posttest AQ scores and, thus, a reduction in problem behaviors. My study results coincide with literature that parental interactions may contribute to an adolescent's choices and responses during treatment (Sheeber et al., 2009). Calame et al. (2011) elaborated that resiliency and the effective use of skills training empowers family members to work on problem solving together. Family members are empowered to work together in a holistic way and learn new prosocial skills; the adolescent is not isolated from family members (Calame et al., 2011). According to Yasui and Dishion (2007), developing a strength based treatment

perspective and implementing new skills into groups serve as an anchor for understanding skill development among adolescents in diverse groups. Moreover, this coincides with past research that residential treatment has the highest prospective for positive outcomes when adolescents and families are engaged in a family-driven, youth-guided treatment modality (Brown et al., 2010). More importantly the outcome results, allows for parents, caregivers, residential treatment teams, and affiliated agencies to recognize the importance of helping adolescents that struggle with uncontrollable behaviors.

Providing insight into how factors may attribute to adolescent positive responses to treatment serves as guide for the entire treatment team. Level of group participation, gender, and parental involvement did predict a reduction in risk assessment for adolescents in treatment. Level of group participation had a positive correlation while gender and parental involvement had a negative correlation with post overall (AQ) score differences. A standardized covariance value lies between -1 and +1, which shows that there is a linear relationship among the variables (Field, 2009). I found that level of group participation and post overall AQ scores were positively correlated, which indicates that, as one variable increases, the other variable increases by a proportionate amount (Field, 2009). The results indicate that attentive/resistant and inattentive/resistant ART group participation levels were significantly correlated with post AQ score differences. Participants in the attentive group showed improvement in group participation than those in the inattentive and resistant groups. Moreover, my finding shows that as the participants become more active, their post AQ score difference improves.



On the other hand the attentive/inattentive group combination ( $M = 2.83$ ,  $SD = 1.40$ ),  $p > 0.05$  was found insignificant, which may be due to the small difference between the participant group size attentive ( $n = 64$ ) and inattentive ( $n = 69$ ). However, the finding in this study differs from the ART group leaders point card score of behaviors and interactions of post group participation level documentation. Moreover, the results of my study do not provide a reason for the insignificant findings between the attentive and inattentive post overall score difference among the participants. Knorth et al. (2007) inferred that there are difference in aggressive behaviors, moreover that adolescents who display proactive aggression generally exhibit adequate social skills, are reasonably intelligent, and verbally proficient. This may account for how some adolescents become interruptive in group and push the limits, but in turn tend to be able to refocus when redirected by the group leader. Another characteristic that may attribute to inattentive group participation may be deliberate decision making, according to Wolff and Crockett (2011) some risk taking behaviors may be deliberate, specifically the reason the adolescent chose to act out at a specific time, moreover had the ability to refocus when redirected. For example in ART group, an adolescent may not like the topic and decides to interrupt the group enough to activate responses from other peers (Wolff et al., 2011). Furthermore, other variables may attribute differences in overall group participation level during his or her residential stay, but were not found among the factors chosen in this study.

The resistant participation group was found to be insignificant, which may be due to the smaller participant group size. My finding is in line with those of other researchers

who have found that that adolescents with more critical behavioral issues at admission have slower rates of change at discharge than those with less aggressive behaviors (Nofle et al., 2011). More importantly, my findings reveal that adolescents across group levels adapted to ART group norms and had the ability to develop new skills such as decreased aggression and increased anger control overtime. Furthermore, research has indicated that resilience is demonstrated when the adolescent is able to prosper and positively adapt despite past or current traumatic events (Brownlee, et al., 2013).

The variable combinations gender/post overall AQ score differences and parental involvement/ post overall AQ score differences were found to have a negative correlations. Field (2009) indicated that as one variable increases in a negative correlation, the other variable decreases by a proportionate amount. For example, during the analysis process gender was coded (male = 1 and female = 2), with 40% males and 60% females. The results indicated the female gender group had improved overall AQ score differences following the ART group experience than their male counterparts. This could be due to difference in sample size; the female group was larger than male group. Moreover, this is important outcome as the finding counters previous researchers difficulties in establishing when externalizing and internalizing developmental and etiological differences emerge among genders during adolescence, and in my study, females were found to do better in post overall AQ difference scores (Handwrek et al., 2006). Handwrek et al. (2006) explained that gender differences have been found in past research to be predominant in various diagnoses, in comorbidity of childhood disorders, and in response to treatment (Handwrek et al., 2006). Responses to treatment among

males and females may differ, due their experiences and perceptions of those experiences.

Another important factor combination that was found to have a significant negative correlation was parental involvement/post overall AQ score differences. For example during the analysis process, parental involvement was coded (yes = 1 and no = 2), with 91.3% parent involvement and 8.8% no parent involvement. As mentioned previously, parent involvement had predictability in attentive participation level and has been found as a predictor variable with post overall AQ score differences. Moreover, this was an important finding as it further iterates that those participants with increased parental involvement demonstrated a decrease in post overall AQ score differences. Furthermore, research indicated that family involvement is the corner-stone for successful outcomes with adolescents in out of home placement (Garfat, 2011). Garfat (2011) elaborated that supporting the development and enhancement of family members working together, thus in turn promotes parent-child growth. In addition, this coincides with previous research that residential outcomes are highly associated with level of family involvement, including program overall completion, and adolescents behavioral improvements at discharge (Sunseri, 2004). Robst et al., (2013) indicated that strong attachments between a parent and adolescent leads to an ability to form intimate, trusting, and emotionally secure relationships due to increased self-worth, and improved potential outcomes when the youth returns home.

Furthermore, past research elaborated that understanding the importance of family involvement is viewed as key component of an adolescent residential treatment

process; however, little is known about the impact of family members on changes in adolescent behaviors. The findings of my study will aid in closing the gap in understanding the significance of parent-adolescent interactions during residential treatment, and, more importantly, how an adolescent response to treatment improves as indicated by the post overall AQ score differences of my study. In addition, research has indicated that becoming aware of, and responding to diverse needs of adolescents, allows for positive outcome responses to change (Holleran & Steiker, 2005). Moreover, that cognitive interventions such as effective problem solving, understanding diversity, identifying and describing problems, and generating positive solutions can challenge the adolescent's cognitive distortions (Pazaratz, 2005; Rafferty et al., 2010; Smith et al., 2005). Aspects of Goldstein's 1998 goal was to meet the needs of a diverse group of adolescents with their understanding and living everyday life, as a result of Goldstein introduced ART, which has continued to be implemented without bias by trained group leaders throughout the years (Amendola & Oliver, 2010; Goldstein, 1999).

Using a combination of treatment modalities in conjunction with ART group therapy may increase the adolescent's ability to become aware of his or her behavioral choices and become less resistant to change and to learning new coping skills, such as anger management. This coincides with the theoretical foundations of my study, (i.e., change and cognitive theories), specifically introducing new rules and structure when aggressive adolescents are placed into residential treatment facilities. Beck (1976) elaborated that the introduction to new rules may serve as standards to assess, monitor, or discourage unwanted behaviors every day for adolescents to evaluate, justify, and

rationalize his or her own behavioral changes. The results of my study indicated that there were significant differences in reduction of aggression scores, specifically between group participation levels such as attentive/resistant and inattentive/resistant; thus indicating that active participation in a group enhances the adolescent's ability to increase his or her anger control skills and decrease aggression on the post-test questionnaire. This subsequently demonstrated that the adolescents who participated in the ART group were able to self-report his or her own changes; thus demonstrating that the treatment provided guidance in decreasing aggression and increasing anger control skills as indicated by the aggression questionnaire outcome scores difference.

Previous research indicated that individuals use cognitive structures to process information and create meaning by making connections, finding patterns, identifying rules, and conceptualizing values (Sharf, 2012). Dattilio and Hanna (2012) indicated that one of the primary change agents indicated in cognitive therapy is the systemic process of a therapist and patient working together. One of the goals in ART group therapy is to integrate teamwork of group participants, allowing each participant to role play and interact within the group format. Moreover, by creating an atmosphere that is safe, adolescents learn to trust one another, which can serve to aid in behavior modification among the group members (Vollmer, 2005). The outcome of my study provided insight into change and the ability of adolescents to modify aggressive behaviors through unfreezing one's current behavioral choices and assimilating to new ways of managing erratic behaviors (Lewin & Gold, 1999). Ensminger and Surry (2008) indicated that one phase of change is taking the initiative to challenge and uncover barriers, subsequently

accepting those changes and implementing them. The second phase is refreezing those new behaviors that have been learned and creating a force field that will help the adolescent adjust to his or her change.

Another aspect of my study's results is the non-significant factors of age, ethnicity, educational level, and family socioeconomic status, which all play an inter-correlating role in an adolescent's life experiences (McKinnie Burnie, 2006; Vecchi, 2009). Previous research indicated that early predictors of adolescent resilience such as gender, age, ethnicity, communication skills, and family involvement increased successful residential outcomes (Dunnen et al., 2012). Moreover, Kools and Spiers (2002) indicated that adolescent change is inevitable due to characteristics associated with puberty that increases cognitive and moral development. This is contradictory to my study which found age to be a non-significant factor in decreased aggression and increased anger control. Another variable found non-significant in my study was ethnicity. This could be due to design and implementation of ART. Research identified a lack of interventions being designed was without consideration of and attention to cultural factors, whereas ART was developed to meet needs of a diverse group of adolescents (Goldstein, 1999; Holleran Steiker, 2005). The results of my study further iterate that the design and implementation of ART is continuing to meet the needs of a diverse group of participants in residential treatment without bias over time (Amendola & Oliver, 2010).

The final two factors that were found to be non-significant in my study were educational level and family socioeconomic status. Research indicated that adolescent

delinquency and academic underachievement are considered serious consequences of adolescents with challenging behaviors and may impose great risk for future adolescent functioning (Timmermans, vanLier, & Koot, 2009). Frensch, Cameron, and Preyde (2009) indicated that youth with emotional and behavioral disorders have increased drop-out rates over students with other types of disabilities; however, in my study education level was found non-significant. The last variable family socioeconomic status was also found non-significant, which coincides with previous research that adolescents at different points of the socioeconomic spectrum develop a sense of understanding over his or her life (Crosnoe & Huston, 2007). McLaughlin et al., (2012) indicated that significant links between low socioeconomic status (SES) and mental disorder have been found throughout the world, which contradicts the non-significant findings in my study. More importantly the non-significant findings in the remaining variable outline the importance of variable selection for research studies.

Variables have numerous characteristics that determine their place in a research design and types of measurement techniques that are to be used (Frankfort-Nachmias & Nachmias, 2008). More importantly, the selection of variables helped to format the questions for my study and the analysis that provided the results to answer what was being investigated (Frankfort-Nachmias & Nachmias, 2008). Therefore, the variables selected in the my study were to help narrow down predicting factors that could decrease aggression and increase anger control as indicated by the archival Aggression Questionnaire overall outcome scores difference. Moreover, the results of my study delineated the predicting factors that have the potential to help others gain insight into an

adolescent's individual responses to treatment, and as a result, empower adolescents to maintain an aggression free lifestyle through anger management.

### **Limitations of the Study**

The general limitation of my study was related to using archival data; this created an issue given that I could not view or interact during the overall participation ART group, but only infer from the documented data provided. Schenker and Rumrill (2004) indicated that in causal- comparative studies, the researchers attempt to determine causes or reasons for preexisting differences in data sets, which is a limitation when compared to an experimental design. Creswell (2009) indicated that in experimental research designs the researcher seeks to determine if a specific treatment influences an outcome, through random assignments of subjects to a treatment group or a non-treatment group. This, in turn, allows for the researcher to investigate a cause and effect relationship between the independent and dependent variables, through the manipulation of the independent variable and measure of change that occurs with the dependent variable (Creswell, 2009).

In this causal-comparative study the independent variables are categorical and not manipulated; for example level of participation allowed the participants to be put into a category through preexisting information and the dependent variable was measured through preexisting data outcome scores (Schenker & Rumrill, 2004). Moreover, Schenker and Rumrill (2004) elaborated that the researcher starts with a cause and investigates the effects of the data sets on some variables, which allowed me to take an outsider view on the overall aggression questionnaire outcome scores and variables that may have predictability on decreased aggression and increased anger control skills.



Creswell (2009) indicated that an internal threat to validity may result from experimental procedures, treatments, or experiences of the participant. Given that I was not able to take part in the treatment modality in my study, it provided more validity to the study, as well as allowed for others to view the outcome data from this casual-comparative study with a neutral mindset. In taking this chosen route the outcome results of my study provided insight into gender, adolescent group participation level (attentive, inattentive, and resistant), and parent involvement/caregiver play a role during his or her child's residential treatment stay and outcome of residential treatment.

A second limitation was the gender of participants; two of the five residential facilities were male facilities, which provided an unequal gender sample. An unequal gender could cause negative effects to the external validity in my study, given that the range of generalizability of research findings should be universal to a larger population (Frankfurt-Nachmias & Nachmias, 2008). However, the outcome results of my study demonstrated that ART is not gender biased and creates an overview that gender within residential treatment facilities has the same opportunities to make changes and regain control of unwanted behavioral outbursts. In taking this chosen route the outcome results of my study provided insight into how the factor gender was delineated among the other variables and found significant in my study. Moreover, this is important given that the Juvenile Justice and Delinquency Prevention Act require states to address gender bias among services provided to adolescents (Brack et al., 2012).

### **Recommendations**

My study highlighted many different aspects of treatment modalities that a patient may incur when placed into a residential treatment facility. Some recommendations for further research are to look into ART group participation levels, specifically how many group cycles an adolescent participated in before being discharged and then compare posttest overall Aggression Questionnaire scores difference to dissimilar time spans. Another recommendation would be to investigate deeper into parental involvement, specifically how frequently the parents interact with the adolescent during the residential treatment, (i.e. parent/child group therapy). A final recommendation would be to look at gender, specifically at group interactions and participation scores, as this will group leaders to address any outside issues such as misunderstanding of group materials that some adolescents may be struggling with and do not acknowledge this during group time. For example, in past literature cultural beliefs such as gender hierarchy and parenting skill differ among diverse populations (Dunnen et al., 2012; Yasui & Dishion, 2007). Moreover, one of the goals of my study is to help others understand the factors that lead to adolescent positive outcome responses. Therefore, understanding the differences among cultures and parenting skills will in turn help to empower change among adolescents during treatment, as well as for parents who are involved throughout the treatment process.

### **Implications**

As helpers working in the mental health profession, it is imperative to gain an understanding of the diversity that exists among individuals, families, organizations, and

societies. Mental health professionals working in residential facilities become a part of a team at the initial intake of an adolescent placed into the treatment program. The team consists of the adolescent (client), parent(s), affiliated agencies, organizational employees, therapist, psychologist, and psychiatrists, all of which work together to develop treatment goals. An underlying aspect of the team formation is to teach the client that he or she has a role in treatment, thus empowering him or her to strive to meet the goals of treatment.

Since my study utilized cognitive and change theory, it allowed a viewpoint of how new rules, structure, and new skill development through group participation may empower adolescent changes through positive interactions. Aggression Replacement Training (ART) provides anger control, moral reasoning, and skillstreaming group therapy. During the group process the adolescents are introduced to new skill development methods, thus in turn begin to gain awareness of self and how his or her behavioral choices have an impact on self and others in the community. The results of the my study exemplifies that ART group therapy empowers new skill development across group level participation decreasing aggression and increasing anger control skill as measured by overall post aggression questionnaire score differences. My study can help inform other adolescent residential facilities on the importance of offering ART group as a part of their program for aggressive adolescents, as well as empowering the adolescent's parent or caregiver to become involved with the child's treatment. This in turn, could help with enhancing positive social change through new skill development such as non-aggressive peer, family, and societal interactions on a daily basis.

## **Conclusion**

My study provided a view into adolescents who display erratic aggressive behaviors that were placed into one of five residential treatment facilities located in Pennsylvania. Upon arrival at residential treatment facilities, adolescents receive an intake assessment within the first 24-hours. This provides a self-reported baseline pretest aggression questionnaire, which helps the entire treatment team formulate treatment goals. Another aspect of the intake interview is that it allows the therapists to explain the program rules, daily routines, and expectations of behaviors during the residential treatment stay. Acclimation into the ART treatment group begins immediately and provides an opportunity for new skill development upon each group attendance. Aggression Replacement Training (ART) groups are scheduled three times a week (i.e., anger control, skillstreaming, and moral reasoning) and allows for each participant to bring his or her own unique abilities to the group; subsequently, forming a safe environment for group participants to interact, while working on behavioral issues in a nonviolent manner. Group attendance, interaction, and participation enhances each participant's awareness of self and others over time, thus refining one's own anger control, while remaining supportive of others in the residential community.

The true impact of his or her group treatment experience occurs over time and usually can be seen when the adolescent begins to use new skills on a daily basis such as anger control without erratic aggressive behavioral outbursts. Moreover, adolescents begin promoting social change through positive role modeling among his or her peer group, parents, family, staff, and societal interactions on a daily basis; thus, subsequently

setting the stepping stones for the adolescents to become more active in group participation and interacting positively with his or her parent during his or her residential treatment. The results of this casual comparative study indicated that adolescents who actively participated in ART group treatment provided self-reported positive outcome scores, thus demonstrating decreased aggression and increased anger control skills. The results of my study supported that adolescents learned new skills and that these skills would allow for positive elements of social change to occur. Therefore, the outcomes of my study can serve as a guide for future agencies and therapists to become aware of cultural differences among participants' in group therapy and encourage parent(s) to be actively involved during their adolescent's treatment.

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## Appendix A: Data Use Agreement

This Data Use Agreement (“Agreement”), effective as of 8/5/2015 (“Effective Date”), is entered into by and between Coral Ondrus (“Data Recipient”) and Perseus House Inc., Mark Amendola executive director (“Data Provider”). The purpose of this Agreement is to provide Data Recipient with access to a Limited Data Set (“LDS”) for use in research in accord with the HIPAA and FERPA Regulations.

1. Definitions. Unless otherwise specified in this Agreement, all capitalized terms used in this Agreement not otherwise defined have the meaning established for purposes of the “HIPAA Regulations” codified at Title 45 parts 160 through 164 of the United States Code of Federal Regulations, as amended from time to time.
2. Preparation of the LDS. Data Provider shall prepare and furnish to Data Recipient a LDS in accord with any applicable HIPAA or FERPA Regulations
3. Data Fields in the LDS. No direct identifiers such as names may be included in the Limited Data Set (LDS). In preparing the LDS, Data Provider shall include the **data fields specified as follows**, which are the minimum necessary to accomplish the research (list all data to be provided): (a) age, (b) gender, (c) ethnicity, (d) parent involvement, (e) education level, (f) family socio-economic status, (g) ART group participation, (h) pre- Aggressive questionnaire overall score and (i) post- Aggressive Questionnaire overall score.
4. Responsibilities of Data Recipient. Data Recipient agrees to:
  - a. Use or disclose the LDS only as permitted by this Agreement or as required by law;
  - b. Use appropriate safeguards to prevent use or disclosure of the LDS other than as permitted by this Agreement or required by law;
  - c. Report to Data Provider any use or disclosure of the LDS of which it becomes aware that is not permitted by this Agreement or required by law;
  - d. Require any of its subcontractors or agents that receive or have access to the LDS to agree to the same restrictions and conditions on the use and/or disclosure of the LDS that apply to Data Recipient under this Agreement; and
  - e. Not use the information in the LDS to identify or contact the individuals who are data subjects.
5. Permitted Uses and Disclosures of the LDS. Data Recipient may use and/or disclose the LDS for its Research activities only.

6. Term and Termination.

- a. Term. The term of this Agreement shall commence as of the Effective Date and shall continue for so long as Data Recipient retains the LDS, unless sooner terminated as set forth in this Agreement.
- b. Termination by Data Recipient. Data Recipient may terminate this agreement at any time by notifying the Data Provider and returning or destroying the LDS.
- c. Termination by Data Provider. Data Provider may terminate this agreement at any time by providing thirty (30) days prior written notice to Data Recipient.
- d. For Breach. Data Provider shall provide written notice to Data Recipient within ten (10) days of any determination that Data Recipient has breached a material term of this Agreement. Data Provider shall afford Data Recipient an opportunity to cure said alleged material breach upon mutually agreeable terms. Failure to agree on mutually agreeable terms for cure within thirty (30) days shall be grounds for the immediate termination of this Agreement by Data Provider.
- e. Effect of Termination. Sections 1, 4, 5, 6(e) and 7 of this Agreement shall survive any termination of this Agreement under subsections c or d.

7. Miscellaneous.

- a. Change in Law. The parties agree to negotiate in good faith to amend this Agreement to comport with changes in federal law that materially alter either or both parties' obligations under this Agreement. Provided however, that if the parties are unable to agree to mutually acceptable amendment(s) by the compliance date of the change in applicable law or regulations, either Party may terminate this Agreement as provided in section 6.
- b. Construction of Terms. The terms of this Agreement shall be construed to give effect to applicable federal interpretative guidance regarding the HIPAA Regulations.
- c. No Third Party Beneficiaries. Nothing in this Agreement shall confer upon any person other than the parties and their respective successors or assigns, any rights, remedies, obligations, or liabilities whatsoever.

- d. Counterparts. This Agreement may be executed in one or more counterparts, each of which shall be deemed an original, but all of which together shall constitute one and the same instrument.
- e. Headings. The headings and other captions in this Agreement are for convenience and reference only and shall not be used in interpreting, construing or enforcing any of the provisions of this Agreement.

IN WITNESS WHEREOF, each of the undersigned has caused this Agreement to be duly executed in its name and on its behalf.

**DATA PROVIDER****DATA RECIPIENT**

Signed: Mark Auendolt

Signed: Coral Ondrus 8/7/15

Print Name: MARK AUENDOLT

Print Name: Coral Ondrus

Print Title: EXECUTIVE DIRECTOR

Print Title: CES Data Recipient

8-7-15

## Appendix B: Permission to Reprint Portions of the Aggression Questionnaire

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February 19, 2015

Coral A. Ondrus  
Counseling Education and Supervision Doctorate Student  
Walden University

Re: Aggression Questionnaire (AQ)

Dear Coral—

This follows up your request of 12Feb'15, regarding permission to reprint selected test item #7 and #24 from the Aggression Questionnaire (AQ) manual, in your upcoming dissertation paper.

WPS permits your reprint of the requested item for the described purpose and indicated edition only, on provision that the following required notice appears in its entirety on each reprint that you make of the AQ:

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Sincerely yours,  
Sandra I. Ceja  
WPS Rights & Permissions Specialist  
e-mail: [redacted]